



Maintenance

Audi A6 2011 ➤
Audi A7 Sportback 2011 ➤
Edition 12.2018



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Service Department. Technical Information

Maintenance

Heading

1. General information
2. Preparations
3. Maintenance
4. Exhaust emissions test



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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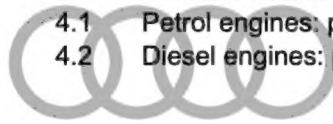
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1 General information

(AIGG000992; Edition 12.2018)

Change history [⇒ page 1](#)

Engine number [⇒ page 1](#)

Vehicle identification number [⇒ page 4](#)

Vehicle data sticker [⇒ page 4](#)

Warnings for high-voltage vehicles [⇒ page 5](#)

1.1 --- Change history ---

N. o.	Date	Chapter	Changes made
1 2	15.05.20 19	Steering boots and inner hose clips: checking secure seating ⇒ page 60	Chapter added for Chinese market
1 1	03.05.20 18	Diagnostic work: performing ⇒ page 26	New chapter
		Water drains - sliding panoramic sunroof: checking ⇒ page 67	New chapter
1 0	06.11.20 17	Various chapters on stock vehicle management	Chapter modified



Note

 For greater clarity, only the last three updates to the document
are listed.

1.2 **Engine number** Copying for private or commercial purposes, in part or in whole, is not
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*The engine number consists of the engine code letters (3 or 4
characters) and the serial number.*

4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid [⇒ page 2](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI [⇒ page 2](#)

6-cyl. petrol engine 3.0 TFSI [⇒ page 3](#)

8-cyl. petrol engine 4.0 TFSI [⇒ page 3](#)

4-cyl. diesel engine 2.0 TDI [⇒ page 3](#)

6-cyl. diesel engine 3.0 TDI [⇒ page 3](#)

1.2.1 4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid

DANGER

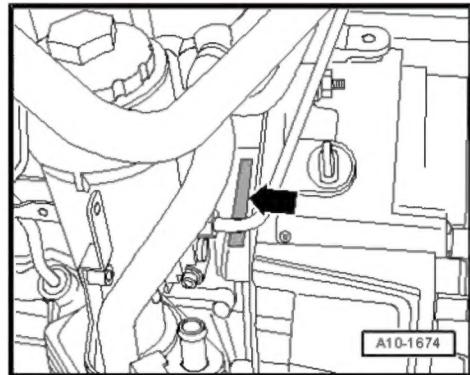
Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ Handling high-voltage wires [⇒ page 7](#) .
- ◆ For work in the vicinity of high-voltage components [⇒ page 6](#) .

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#) .

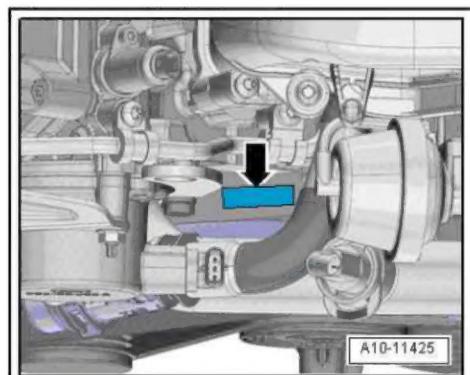


1.2.2 6-cyl. petrol engine 2.5 FSI/2.8 FSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#) .



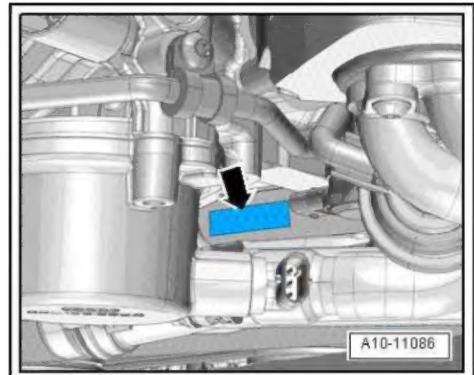
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1.2.3 6-cyl. petrol engine 3.0 TFSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

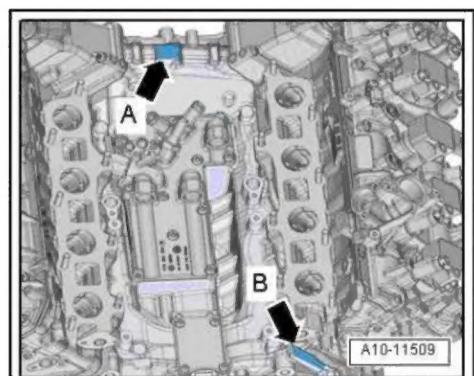


1.2.4 8-cyl. petrol engine 4.0 TFSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top) -arrow A-.

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

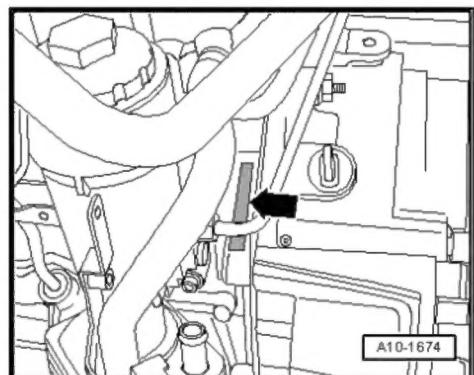


1.2.5 4-cyl. diesel engine 2.0 TDI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

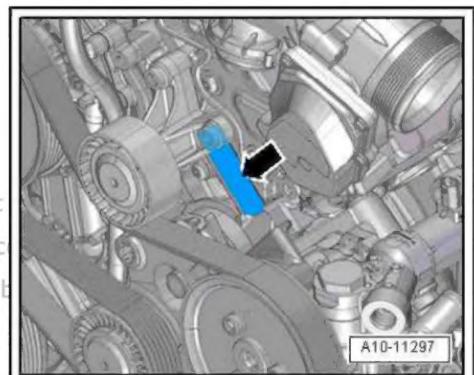


1.2.6 6-cyl. diesel engine 3.0 TDI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

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1.3 Vehicle identification number

Depending on the equipment and country-specific version, the vehicle identification number is located:

- ◆ Optional: In the MMI under »Car systems«
- ◆ At the bottom left edge of the windscreen
- ◆ On the right side of the engine compartment under a cover
- ◆ On the bulkhead of the engine compartment
- ◆ On the vehicle data sticker [page 4](#)

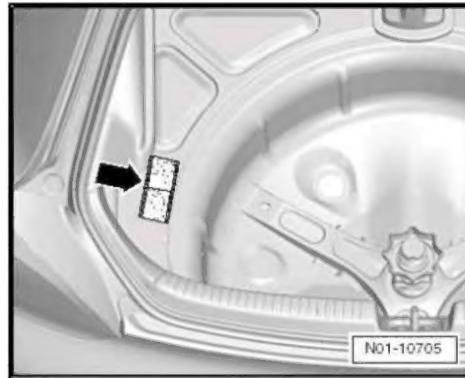
The vehicle identification number consists of the following:

WAU	ZZZ	4G	Z	B	A/N	000 234
Manufacturer code	Filler characters	Type	Filler characters	Model year	Production location	Serial number

1.4 Vehicle data sticker

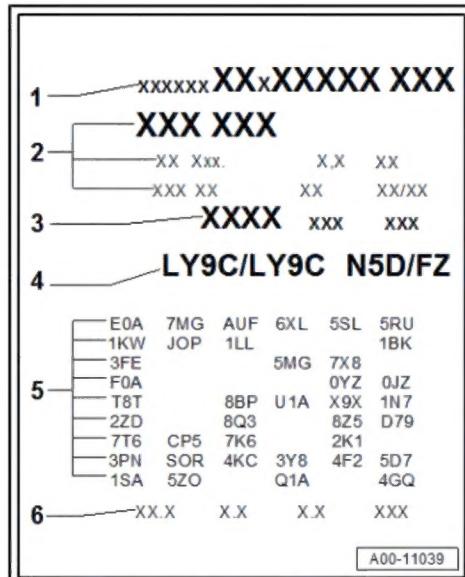
The vehicle data sticker is located:

- ◆ In the Service Schedule or service wallet
- ◆ In the area of the spare wheel well under the floor covering -arrow-



The vehicle data sticker contains the following vehicle data:

- 1 - Vehicle identification number
- 2 - Vehicle model, manufacturer's code, engine type and power output, production month and year
- 3 - Engine and gearbox code letters (not specified on some export models)
- 4 - Paint number, interior equipment number
- 5 - Numbers for optional extras
- 6 - Fuel consumption: urban, extra urban, combined, CO2 (not specified on some export models)



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1.5 Warnings for high-voltage vehicles

Overview of high-voltage components and wires [⇒ page 5](#)

Working in the vicinity of high-voltage components [⇒ page 6](#)

Handling high-voltage wires [⇒ page 7](#)

Work that must be performed with the ignition switched on
[⇒ page 8](#)

Work that must be performed with the ignition switched off
[⇒ page 8](#)

1.5.1 Overview of high-voltage components and wires

The high-voltage system of the Audi A6 is comprised of the following components:

1 - Combustion engine

2 - High-voltage wire for electrical air conditioner compressor - P3-

- Red warning label

3 - Power and control electronics for electric drive - JX1-

- Electric drive control unit - J841-
- Voltage converter - A19-
- DC/AC converter for drive motor - A37-
- Red warning label
- Coded high-voltage connections

4 - Drive battery - A2-

- Maintenance connector for high-voltage system - TW-
- Red warning label and battery warning label
- Coded high-voltage connections

5 - Air duct for cooling drive battery - A2-

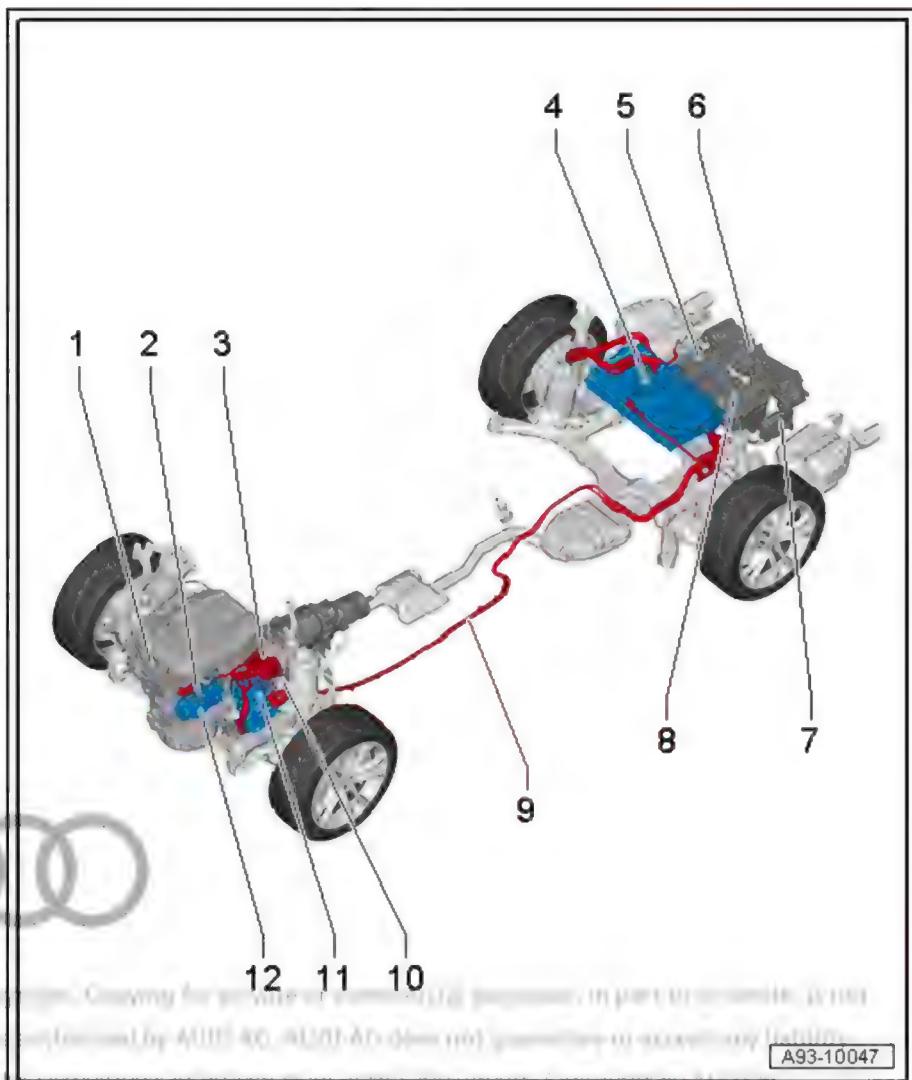
6 - Cooling module for drive battery - A2-

7 - High-voltage system wiring junction - TV1-

8 - Air supply duct for cooling drive battery - A2-

9 - High-voltage wire for hybrid battery - PX1-

- High-voltage wiring harness for high-voltage battery, positive terminal - P1- (red coloured ring)
- High-voltage wiring harness for hybrid battery, negative terminal - P2- (brown coloured ring)
- Coding of high-voltage connections to drive battery - A2-
- Coding of high-voltage connections to power and control electronics for electric drive - JX1-



A93-10047

10 - High-voltage wiring harness for drive motor - PX2-

- High-voltage wire 1 for drive motor - P4- (U) blue coloured ring/coding lug on right side
- High-voltage wire 1 for drive motor - P5- (V) green coloured ring/coding lug on left side
- High-voltage wire 1 for drive motor - P6- (W) violet coloured ring/two coding lugs
- Coding of high-voltage connections to power and control electronics for electric drive - JX1-
- Coding of high-voltage connections to electric drive motor - V141-

11 - Electric drive motor - V141-

- Red warning label
- Coded high-voltage connections

12 - Electrical air conditioner compressor - V470-

- Coding of high-voltage connection: red coloured ring

1.5.2 Working in the vicinity of high-voltage components

DANGER

Risk of fatal injury if high-voltage components are damaged.

Observe the following when working in the vicinity of high-voltage components or wiring:

- ◆ It is not permitted to use cutting or forming tools, other sharp-edged tools or heat sources such as welding, brazing, soldering, hot air or thermal bonding equipment.
- ◆ Before starting work, visually inspect the high-voltage components in the areas involved.
- ◆ Before working in the engine compartment, visually inspect the power and control electronics for electric drive - JX1-, electric drive motor - V141-, air conditioner compressor - V470- and high-voltage wiring.
- ◆ Before working on the vehicle underbody, visually inspect the high-voltage wiring and covers.
- ◆ Before working on the rear section of the vehicle, visually inspect the high-voltage wiring and the electronics box with the maintenance connector for high-voltage system - TW-.
- ◆ Visually inspect all potential equalisation lines.

Check the following when making the visual inspection:

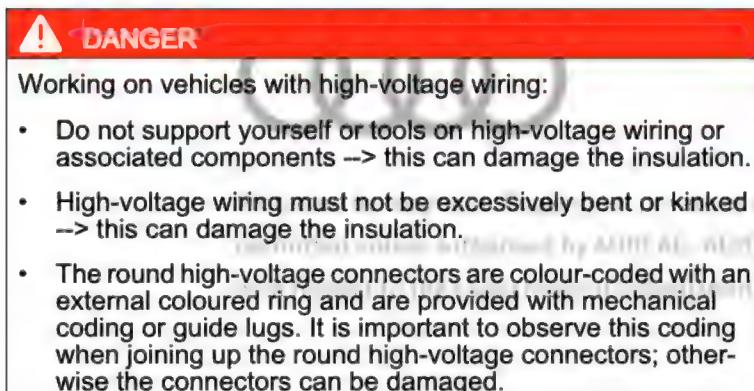
- ◆ There must be no external damage on any component.
- ◆ The insulation of the high-voltage wiring and potential equalisation lines must not be damaged.
- ◆ There must be no unusual deformation of the high-voltage wiring.
- ◆ All high-voltage components must be identified by a red warning sticker.



Note

- ◆ *Certain qualifications are required to perform different types of work on high-voltage vehicles ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Qualification of internal/external personnel .*
- ◆ *Note distinguishing features of Audi high-voltage vehicles, description of high-voltage technology etc. ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Distinguishing features of Audi high-voltage vehicles .*
- ◆ *Overview of high-voltage components and wires* [⇒ page 5](#) .

1.5.3 Handling high-voltage wires



Note

- ◆ *Certain qualifications are required to perform different types of work on high-voltage vehicles ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Qualification of internal/external personnel .*
- ◆ *Note distinguishing features of Audi high-voltage vehicles, description of high-voltage technology etc. ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Distinguishing features of Audi high-voltage vehicles .*
- ◆ *Overview of high-voltage components and wires* [⇒ page 5](#) .

1.5.4 Work that must be performed with the ignition switched on

DANGER

When working on a vehicle with the ignition switched on or while the drive system is active, the engine can start unexpectedly and exhaust fumes can cause a health hazard in closed rooms. Moving parts can trap or draw in parts of the body and/or clothing (safety hazard).

Before switching on the ignition, perform the following steps:

- ◆ Move selector lever to position P
- ◆ Activate parking brake
- ◆ Switch off ignition
- ◆ Open bonnet
- ◆ Connect battery charger (e.g. battery charger - VAS 5095A-) to jump-start connections of 12 V electrical system
- ◆ Switching on ignition

Note

- ◆ *Certain qualifications are required to perform different types of work on high-voltage vehicles ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Qualification of internal/external personnel .*
- ◆ *Note distinguishing features of Audi high-voltage vehicles, description of high-voltage technology etc. ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Distinguishing features of Audi high-voltage vehicles .*
- ◆ *Overview of high-voltage components and wires ⇒ [page 5](#) .*

1.5.5 Work that must be performed with the ignition switched off

WARNING

Safety hazard: the engine can start unexpectedly.

Before carrying out general work on a vehicle with high-voltage electrical system, switch off the ignition and remove the ignition key from the vehicle.

Note

- ◆ *Certain qualifications are required to perform different types of work on high-voltage vehicles ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Qualification of internal/external personnel .*
- ◆ *Note distinguishing features of Audi high-voltage vehicles, description of high-voltage technology etc. ⇒ Basic information on high-voltage vehicles; Rep. gr. 00 ; Distinguishing features of Audi high-voltage vehicles .*
- ◆ *Overview of high-voltage components and wires ⇒ [page 5](#) .*

2 Preparations

Vehicle: raising [page 9](#)

Engine cover panel: removing and installing [page 11](#)

Noise insulation: removing and installing [page 15](#)

Window regulators: activating automatic open/close function
[page 17](#)

Vehicle diagnostic tester: connecting [page 17](#)

2.1 Vehicle: raising

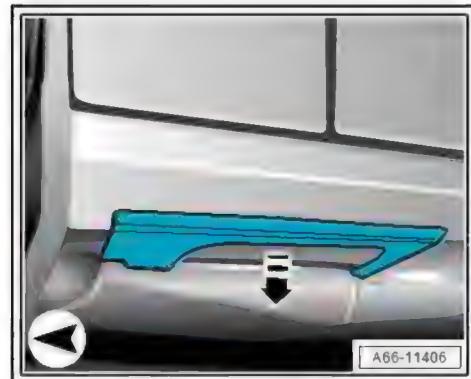
CAUTION

Risk of damage to vehicle due to incorrect use of lifting platform.

- ◆ Do not exceed the permissible lifting capacity of the lifting platform.
- ◆ The vehicle should be lifted only at the points shown in the illustration.
- ◆ Position support plates so that they are aligned centrally below the lifting points.
- ◆ Ensure sufficient clearance between low-mounted vehicle components and the lifting platform.

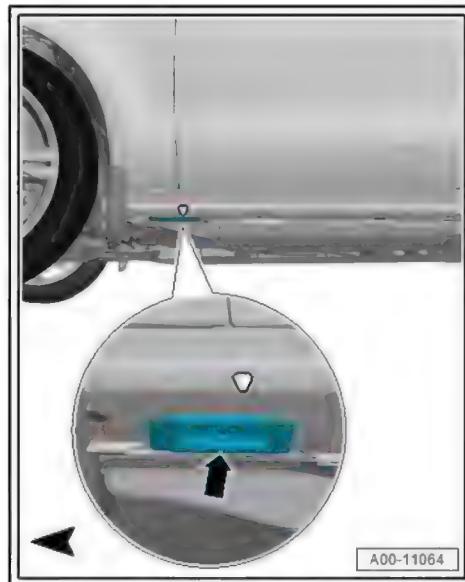
Procedure:

- For vehicles with adaptive air suspension: Activate jacking mode before lifting vehicle [page 10](#).
- Applies to RS models: Pull side member extension covers downwards -arrow- and remove.

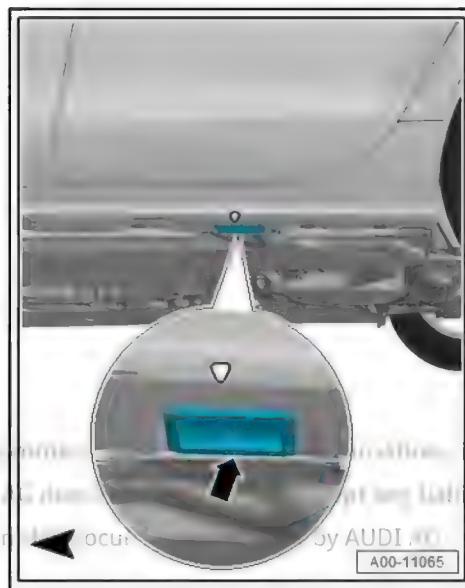


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- Front: Position support plates of lifting platform under plastic mountings -arrow- on underside of side member trim.



- Rear: Position support plates of lifting platform under plastic mountings -arrow- on underside of side member trim.



2.1.1 Activating jacking mode

WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Procedure:

- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«, navigate through following menu structure:
 - ◆ adaptive air suspension
 - ◆ SETUP

- Use MMI rotary pushbutton to select “Jacking mode” and set to “on”.



Note

- ◆ *Jacking mode is switched off again automatically once a speed higher than 15 km/h is reached.*
- ◆ *If jacking mode is activated for a longer period of time, the pressure in the suspension struts may dissipate, thereby lowering the vehicle. If necessary, start the engine briefly to reactivate jacking mode.*

2.2 Engine cover panel: removing and installing

4-cyl. petrol engine 1.8 TFSI/2.0 TFSI (version 1) [⇒ page 11](#)

4-cyl. petrol engine 2.0 TFSI/2.0 TFSI hybrid (version 2)
[⇒ page 12](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI/3.0 TFSI (version 1)
[⇒ page 12](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI (version 2) [⇒ page 13](#)

6-cyl. petrol engine 3.0 TFSI (version 2) [⇒ page 13](#)

8-cyl. petrol engine 4.0 TFSI [⇒ page 14](#)

4-cyl. diesel engine 2.0 TDI [⇒ page 14](#)

6-cyl. diesel engine 3.0 TDI (version 1) [⇒ page 14](#)

6-cyl. diesel engine 3.0 TDI (version 2) [⇒ page 15](#)

6-cyl. diesel engine 3.0 TDI (version 3) [⇒ page 15](#)

2.2.1 4-cyl. petrol engine 1.8 TFSI/2.0 TFSI (version 1)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

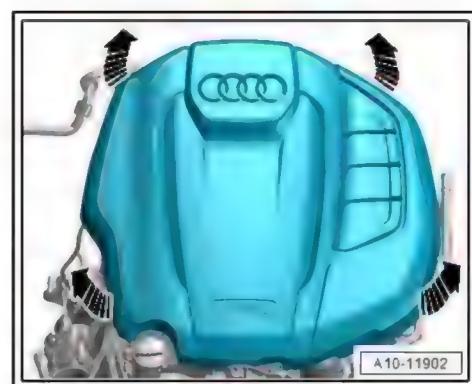
Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 4-cylinder 2.0 TFSI petrol engine [⇒ page 12](#).



2.2.2 4-cyl. petrol engine 2.0 TFSI/2.0 TFSI hybrid (version 2)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.

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with respect to the correctness of information contained in this document. Consult your Audi dealer.



Note

There is more than one version of the engine cover panel for the 4-cylinder 2.0 TFSI petrol engine [⇒ page 11](#).



2.2.3 6-cyl. petrol engine 2.5 FSI/2.8 FSI/3.0 TFSI (version 1)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

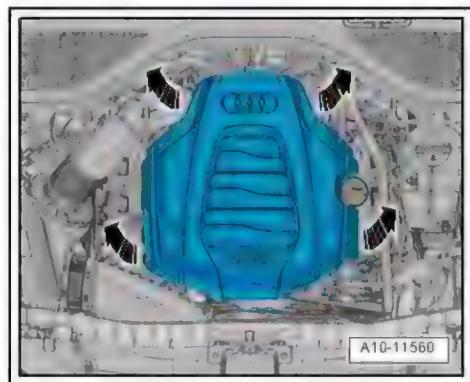
Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

- ◆ *There is more than one version of the engine cover panel for the 6-cylinder 2.5 FSI/2.8 FSI petrol engine [⇒ page 13](#).*
- ◆ *There is more than one version of the engine cover panel for the 6-cylinder 3.0 TFSI petrol engine [⇒ page 13](#).*



2.2.4 6-cyl. petrol engine 2.5 FSI/2.8 FSI (version 2)

Procedure for removing: Copying for private or commercial purposes, in whole or in part, is prohibited.

- Carefully pull engine cover panels off retaining pins one after another -arrows-

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Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 6-cylinder 2.5 FSI/2.8 FSI petrol engine [⇒ page 12](#).



2.2.5 6-cyl. petrol engine 3.0 TFSI (version 2)

Procedure for removing:

- Carefully pull engine cover panels -1- and -2- off retaining pins one after another.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 6-cylinder 3.0 TFSI petrol engine [⇒ page 12](#).



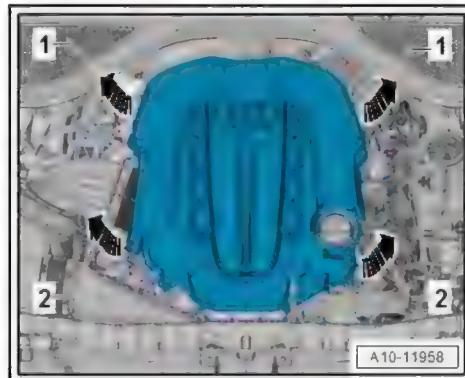
2.2.6 8-cyl. petrol engine 4.0 TFSI

Procedure for removing:

- Carefully pull engine cover panel off rear retaining pins -1-.
- Carefully pull engine cover panel off front retaining pins -2-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.2.7 4-cyl. diesel engine 2.0 TDI

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.2.8 6-cyl. diesel engine 3.0 TDI (version 1)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

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There is more than one version of the engine cover panel for the 6-cylinder 3.0 TDI diesel engine. See page 15 for the correct version of the information.



2.2.9 6-cyl. diesel engine 3.0 TDI (version 2)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

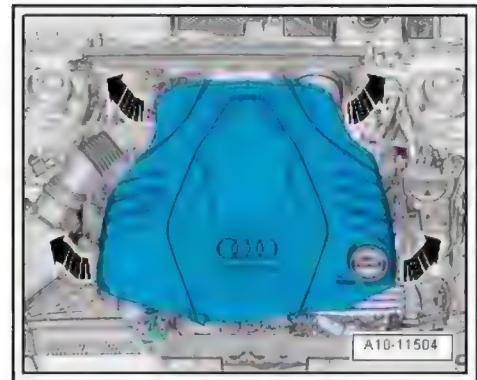
Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 6-cylinder 3.0 TDI diesel engine [⇒ page 15](#).



2.2.10 6-cyl. diesel engine 3.0 TDI (version 3)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 6-cylinder 3.0 TDI diesel engine [⇒ page 14](#).



2.3 Noise insulation: removing and installing

DANGER

Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ For work in the vicinity of high-voltage components
[⇒ page 7](#).

Noise insulation (front) [⇒ page 15](#)

Noise insulation (rear) [⇒ page 16](#)

2.3.1 Noise insulation (front)

Special tools and workshop equipment required

- ◆ Torque wrench - VAS 6583-, measuring range 3 to 60 Nm

Table of tightening torques for installation:

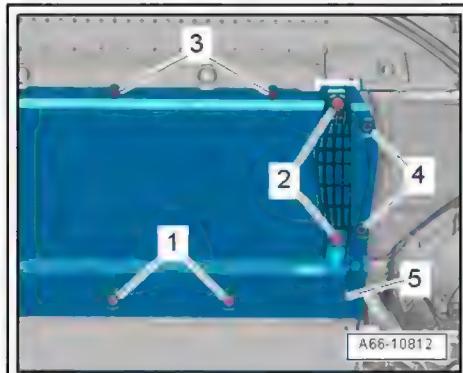
Component/fastener	[Nm]
Bolt M8 -2-	20
Bolt M6 -3-	3.5

Procedure for removing:

- Remove bolts -1- and -2-.
- Unscrew quick-release fasteners -3- and -4-.
- Pull noise insulation -5- towards rear out of bottom section of bumper cover and detach.

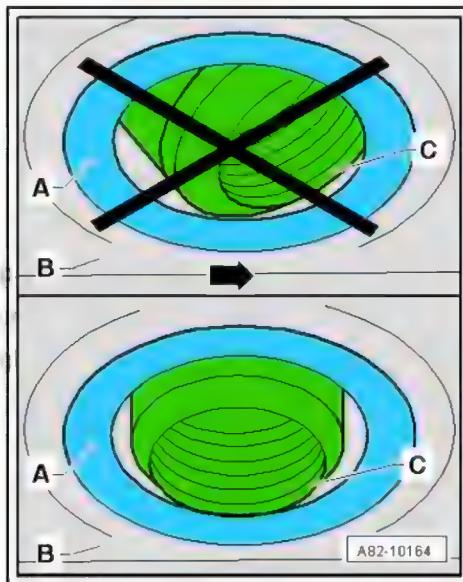
Procedure for installing:

Installation is carried out in reverse sequence. Note tightening torques (see table of tightening torques for installation [⇒ page 15](#)).



i Note

- ◆ Ensure that you feel the quick-release fasteners engage when installing.
- ◆ On vehicles with supplementary heater, opening of exhaust pipe must be routed vertically through grommet in noise insulation.



2.3.2 Noise insulation (rear)

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Bolt M6 -1-	3.6

Procedure for removing:

- Remove bolts -1- at connection to noise insulation (front).
- Unscrew quick-release fasteners -2- and -4-.
- Pull noise insulation -3- towards rear out of noise insulation (front) and detach.

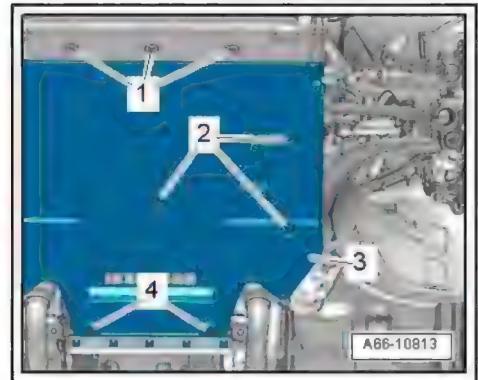
Procedure for installing:

Installation is carried out in reverse sequence. Note tightening torques (see table of tightening torques for installation [⇒ page 16](#)).



Note

Ensure that you feel the quick-release fasteners engage when installing.



2.4 Window regulators: activating automatic open/close function



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#) .

If the vehicle battery was disconnected, the automatic open/close function for the electric windows must be reactivated.

Procedure:

- Pull up on window regulator switch until windows are completely closed.
- Release switch and pull on it again for at least one second.
- Repeat procedure with all window regulators.

2.5 Vehicle diagnostic tester: connecting



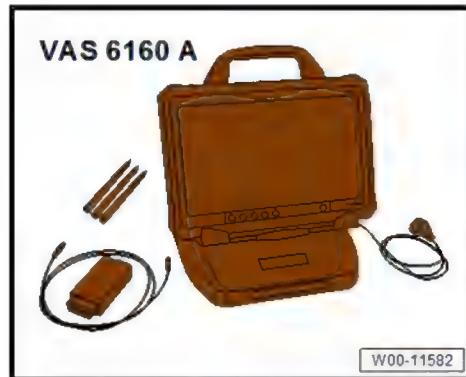
WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#) .

Special tools and workshop equipment required

- ◆ Diagnosis system - VAS 6160 A-



- ◆ Remote diagnosis head - VAS 5054A-
- ◆ Or: diagnosis interface - VAS 5055-

Procedure:

- Plug connector for remote diagnosis head - VAS 5054A- into diagnostic connection in vehicle.
- Switch on diagnostic system - VAS 6160 A- .
- Switch on ignition.
- Follow the menu on the screen to start the desired functions.



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3 Maintenance

Rear final drive: changing gear oil [⇒ page 134](#)

Rear final drive: changing ATF [⇒ page 134](#)

Display instruments: setting time and date [⇒ page 135](#)

Automatic gearbox (multitronic): changing ATF [⇒ page 135](#)

Automatic gearbox (tiptronic): changing ATF [⇒ page 135](#)

Battery: determining and recording state of charge (SOC)
[⇒ page 37](#)

Battery: checking electrolyte level [⇒ page 31](#)

Battery: connecting stationary battery charging unit (min. 30A,
charging voltage max. 14.8 V on IV characteristic curve)
[⇒ page 34](#)

Battery: reading out status [⇒ page 29](#)

Axles (front and rear): checking components for play, secure attachment and damage, and checking protective boots
[⇒ page 55](#)

Passenger airbag: checking key switch on/off and setting to "on"
[⇒ page 78](#)

Tyres (except spare wheel): checking tyre pressures and adjusting to 3.5 bar if necessary [⇒ page 51](#)

Tyres: checking tyre pressures and adjusting if necessary
[⇒ page 49](#)

Tyres: checking condition and wear pattern, and checking and recording tread depth [⇒ page 48](#)

Service wallet: affixing vehicle data sticker [⇒ page 78](#)

Owner's literature: checking that all documents are present
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Brake fluid (vehicles older than 12 months): changing
[⇒ page 45](#)

Brake system: checking condition of brake hoses, and checking that caps are fitted on bleeder screws [⇒ page 45](#)

Brake pads: checking thickness [⇒ page 46](#)

Brake fluid (vehicles older than 12 months): changing
[⇒ page 45](#)

Brake fluid: checking fluid level [⇒ page 45](#)

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Brake discs: checking for surface rust and operating brakes to clean if necessary [⇒ page 47](#)

"TQS – Documentation of the vehicle care" checklist: checking that list is present [⇒ page 134](#)

"Stock vehicle maintenance" checklist: signing and placing in vehicle wallet [⇒ page 134](#)

Roof insert - panorama sunroof: checking, cleaning and lubricating [⇒ page 63](#)

Roof insert - sliding/tilting sunroof: cleaning and lubricating
[⇒ page 61](#)

Data sheet for Radio Equipment Directive: printing and placing in glove compartment [⇒ page 40](#)

Diagnostic work: performing [⇒ page 26](#)

Diesel particulate filter: reading out ash deposit volume
[⇒ page 23](#)

Protective display films: removing if present [⇒ page 134](#)

Dual clutch gearbox (S tronic): changing ATF [⇒ page 135](#)

Dual clutch gearbox (S tronic): changing ATF and renewing exchangeable ATF filter [⇒ page 135](#)

ERA-GLONASS: checking emergency call function [⇒ page 24](#)

Event memory: reading out [⇒ page 25](#)

Headlights and reversing lights, side lights, number plate lights, turn signals, hazard warning lights: checking operation
[⇒ page 75](#)

Vehicle: cleaning interior and exterior [⇒ page 28](#)

Connecting vehicle diagnostic tester and sending diagnostic log
[⇒ page 30](#)

Mirror hanger indicating defective battery: renewing battery on affected vehicles [⇒ page 40](#)

Vehicle exterior: checking unprotected areas for dirt, and cleaning if necessary [⇒ page 131](#)

Vehicle exterior: removing protective film, if present
[⇒ page 131](#)

Vehicle key(s): checking operation and recording number of keys given to customer [⇒ page 81](#)

Vehicle interior and exterior: checking for and documenting any damage [⇒ page 80](#)

Vehicle interior: checking that it is clean and cleaning if necessary
[⇒ page 80](#)

Vehicle interior: removing any objects other than those protecting interior surfaces [⇒ page 80](#)

Vehicle interior: removing protective covers for seats and carpet
[⇒ page 79](#)

Vehicle (from below): checking for damage [⇒ page 60](#)

Vehicle key(s), wheel covers and owner's literature: checking availability and recording number present [⇒ page 81](#)

Vehicle key: removing from ignition lock [⇒ page 81](#)

Vehicle doors: removing edge protection [⇒ page 131](#)

Vehicle cover: checking position and correcting if necessary
[⇒ page 132](#)

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[⇒ page 132](#)

Cleaning and care: checking that required measures have been carried out on time [⇒ page 134](#)

Bonnet arrester hook: lubricating [⇒ page 69](#)

Suspension struts on front and rear axle: removing locking elements and correctly fitting bump stops [⇒ page 53](#)

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Body: checking vehicle paintwork for damage and corrosion from below and with bonnet, rear lid and doors open [⇒ page 132](#)

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[⇒ page 136](#)

Poly V-belt for ancillaries, belt tensioner, idler rollers and pulley for coolant pump: renewing [⇒ page 136](#)

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[⇒ page 136](#)

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Fuel tank: adding fuel additive [⇒ page 126](#)

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Coolant level: checking (coolant level must reach at least top marking on coolant expansion tank) [⇒ page 107](#)

Paintwork, trims, side windows and wiper blades: checking cleanliness [⇒ page 132](#)

Steering boots and inner hose clips: checking secure seating
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Air cleaner: renewing filter element and cleaning housing
[⇒ page 110](#)

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Engine oil: draining [⇒ page 82](#)

Engine oil: extracting [⇒ page 84](#)

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Tyre repair kit: checking that set is complete, and checking and recording expiry date [⇒ page 51](#)



Manual gearbox/automatic gearbox: selecting 1st gear/park
⇒ [page 135](#)

Rear spoiler hinges: lubricating ⇒ [page 68](#)

Windscreen washer system: checking spray pattern and adjusting if necessary ⇒ [page 70](#)

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Seat belts: checking fixing device for latch plate, and checking locking action of automatic belt retractor ⇒ [page 79](#)

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Stock vehicles: observing measures specified in Maintenance table for stock vehicles (see "Before handing vehicle over to customer") ⇒ [page 133](#)

Dust and pollen filter: renewing ⇒ [page 120](#)

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Transport mode: checking activation and activating if necessary ⇒ [page 27](#)

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Door hinges with separate door arrester: cleaning and lubricating ⇒ [page 68](#)

Underbody: checking trim, wheel housing liners, side members and pipes/wiring for damage, and checking that they are properly secured ⇒ [page 60](#)

First-aid kit: checking and recording expiry date ⇒ [page 81](#)

Shipping mode: deactivating ⇒ [page 28](#)

Warning triangle: checking availability ⇒ [page 80](#)

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Toothed belt for camshaft drive, and drive sprockets for camshaft, crankshaft and high-pressure pump: renewing ⇒ [page 137](#)

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⇒ [page 137](#)

Toothed belt for camshaft drive: renewing ⇒ [page 136](#)

Accessories: installing ⇒ [page 133](#)

Spark plugs: renewing ⇒ [page 97](#)

3.1 Diesel particulate filter: reading out ash deposit volume

Table of test values and procedure guidelines:

Engine	Engine code	Measured value designation for diagnostic tester	Maximum value for ash deposit
4-cyl. diesel engine 2.0 TDI	All	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 175 ml
6-cyl. diesel engine 3.0 TDI	CVUA, CVUB	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 240 ml
	CDUC, CDUD, CLAA, CLAB	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 370 ml
	CRTD, CRTE, CRTF, CTCB, CTCC, CZVA, CKVB, CKVC	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 380 ml
	CGQB	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 420 ml

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing and press **Apply**.
- Continue to follow instructions on screen.
- Switch to “Control units” tab.
- Select control unit “01 — Engine electronics” and carry out following functions via right mouse button:
 - ◆ Identify control unit
 - ◆ Guided Functions
 - ◆ 01 - Read measured values
- Select desired measured value (see table of test values and procedure guidelines [⇒ page 23](#)) by entering and confirming with **OK**.
- Evaluate measured value and follow further instructions on screen.
- Perform the following measures according to the measured value:

Result:	Measure:
Measured value < critical value	Vehicle can be driven for a further 30,000 km (19,000 miles).
Measured value ≥ critical value	Renew diesel particulate filter and reset measured value to zero ⇒ Engine; Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .

3.2 ERA-GLONASS: checking emergency call function

Requirements:

- Applies to: vehicles with ERA-GLONASS emergency call function (depends on market).
- The services can only be used if there is sufficient mobile network coverage.
- Transport mode deactivated.

- The system is designed to allow up to 15 minutes between deactivating the transport mode and checking the emergency call function.
- Ensure adequate mobile reception; move vehicle outside if necessary.

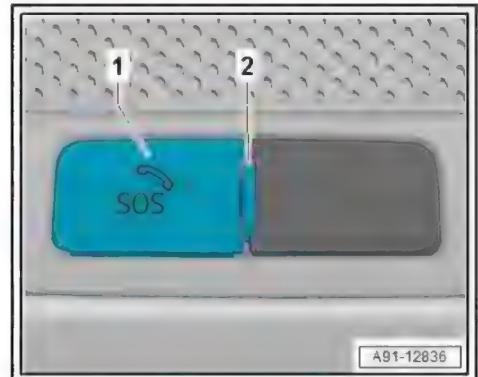
Procedure:

- Switch on ignition.
- Check if LED -2- is lit in green.
- Run ERA-GLONASS test mode:
- Use a pointed object to press and hold test button (behind cover -1- in roof module, in corner next to emergency call button) for three seconds and follow the voice prompts to perform the test.
- Once the test is completed, press the emergency call button to initiate a test call.



Note

- ◆ If the LED lights up in red or if it is not possible to activate the test mode, connect vehicle diagnostic tester [⇒ page 17](#) and perform Guided Fault Finding "75 - Emergency Call Module, functions, Commissioning ERA-GLONASS".
- ◆ Due to applicable legislation in certain countries, the vehicle must not be delivered unless the ERA-GLONASS emergency call function (red LED) has been successfully activated.



3.3 Event memory: reading out



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Select "Working with Guided Fault Finding" by entering **v** and press **Apply**.

The control unit is then identified, and the event memory is interrogated. Observe notes and test conditions.

- Switch to "Control units" tab and call up "Event memory list" for an overview of all entries stored in event memory.
- Select "Test plan" tab and carry out test plans according to instructions.

3.4 Service interval display: resetting service event

WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing and press **Apply**.
- Switch to “Special functions” tab.
- Reset service event via ODIS (select corresponding service event).
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.

Note

The distance until the next oil service is calculated on the basis of the customer's driving profile. When the service interval display is reset, the distance until the next oil service is recalculated on the basis of this driving profile. Frequent cold starts or short journeys make high demands on the engine oil. This can cause the information about the distance until the next oil service to vary, depending on the driving profile.

3.5 Diagnostic work: performing

Procedure:

- Connect vehicle diagnostic tester. [⇒ page 17](#)
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Untick **Working with Guided Fault Finding**.
- Switch to **Special functions** tab and select following program:
 - ◆ **Predelivery inspection total**
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen and complete the process.
- Switch to the **Control units** tab, press the **Guided Fault Finding** button and launch Guided Fault Finding as far as the test plan.
- Carry out test programs on the events read out of the event memory.

3.6 Transport mode: deactivating



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select "Working with Guided Fault Finding" by removing and press **Apply**.
- Switch to "Special functions" tab and select following program:
 - ◆ 19 - Activating / deactivating transport mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

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- ◆ *The transport mode serves to maintain the vehicle's ability to start.*
- ◆ *When the vehicle is in transport mode, many functions, e.g. radio, are restricted or unavailable.*

3.7 Transport mode: checking activation and activating if necessary

Checking transport mode [⇒ page 27](#)

Activating transport mode [⇒ page 27](#)

3.7.1 Checking transport mode

Procedure:

- Switch on ignition.
- Check whether »Transport mode on« is shown in instrument cluster.
- If necessary, activate transport mode [⇒ page 27](#).

3.7.2 Activating transport mode

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select "Working with Guided Fault Finding" by removing and press **Apply**.
- Switch to "Special functions" tab and select following program:

- ◆ 19 - Activating / deactivating transport mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

- ◆ *The transport mode serves to maintain the vehicle's ability to start.*
- ◆ *When the vehicle is in transport mode, many functions, e.g. radio, are restricted or unavailable.*

3.8 Vehicle: cleaning interior and exterior

Procedure:

- Wash vehicle exterior.
- Clean vehicle interior.

3.9 Shipping mode: deactivating



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Procedure:

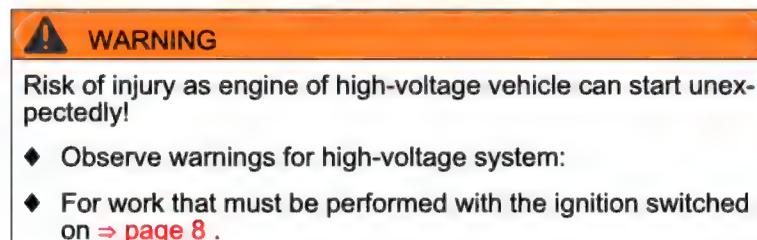
- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select "Working with Guided Fault Finding" by removing and press **Apply**.
- Switch to "Special functions" tab and select following program:
- ◆ 34 - Activating / deactivating shipping mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

Deactivating shipping mode may cause the height of the vehicle to drop.

3.10 Battery: reading out status



*The test program **Predelivery inspection total** may also be used for the Delivery Inspection.*

Battery -A- [⇒ page 29](#)

Second battery -A1- [⇒ page 30](#)

3.10.1 Battery -A-

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Select "Working with Guided Fault Finding" by entering **[v]** and press **[Apply]**.
- Switch to "Special functions" tab and select following program:
 - ◆ A - Battery, Testing
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.
- Use results of test to determine following measures:
- Switch to **Control units** tab.
- Press **[x] Diagnosis** button and close diagnosis program.
- Send off diagnostic log online.



- ◆ *A working network connection is necessary to send the diagnostic log file online.*
- ◆ *After the diagnosis is complete, you will receive confirmation that the test log was sent successfully.*

Result on vehicle diagnostic test- Measure:
er:

"Battery OK"	No further measures necessary.
"Charge battery"	Charge battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Charging battery .
"Battery is no longer of the same quality as when shipped"	Renew battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

3.10.2 Second battery -A1-

Only applies to hybrid vehicles

Procedure:

- Connect vehicle diagnostic tester [⇒ page 17](#).
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Select "Working with Guided Fault Finding" by entering and press **Apply**.
- Switch to "Special functions" tab and select following program:
 - ◆ A - second battery -A1-, check
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.
- Use results of test to determine following measures:

Result on vehicle diagnostic test- Measure:

er:

"Battery OK"	No further measures necessary.
"Charge battery"	Charge battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Charging battery .
"Battery is no longer of the same quality as when shipped"	Renew battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .



Note

A working network connection is necessary to send the diagnostic log file online.

3.11 Connecting vehicle diagnostic tester and sending diagnostic log

- Carry out test programs according to test plan.
- Switch to **Control units** tab.
- Press **X Diagnosis** button and close diagnosis program.
- Send off diagnostic log online.



Note

- ◆ *The event memory is erased automatically when you exit Guided Fault Finding.*
- ◆ *The diagnostic log is sent automatically when you exit Guided Fault Finding.*
- ◆ *If no network connection is available, the diagnostic log will be cached for a few days. Complete the online data transfer as soon as possible.*

3.12 Battery: checking electrolyte level



Note

Batteries must not be opened.

Battery without magic eye [⇒ page 31](#)

Battery with magic eye [⇒ page 32](#)

3.12.1 Battery without magic eye

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

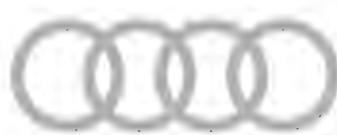
Table of tightening torques for installation:

Component/fastener	[Nm]
Nut on accumulator	9

The battery is located under the luggage compartment floor.

Removal steps:

- Lift luggage compartment floor and secure in position.



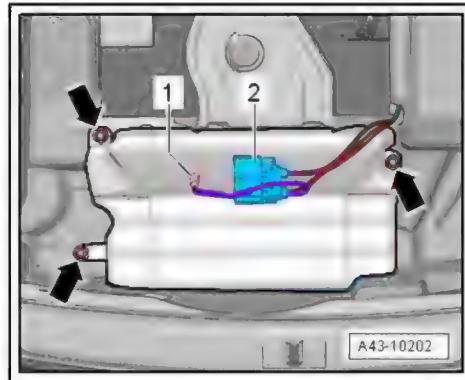
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- Applies to vehicles with adaptive air suspension: Remove nuts -arrows- and move accumulator to side (leave lines -1- and solenoid valve block -2- connected).
- Take out tool kit box.

Procedure:

- Check battery housing for the following:
 - ◆ Battery terminals are not corroded or damaged
 - ◆ Mechanical damage to battery housing and cover, indicated by electrolyte leakage or crystals at the damaged area
- Damaged batteries must be renewed.
- Check electrolyte level of all battery cells using markings on housing.
- If electrolyte level of one or more battery cells is below MIN marking: Renew battery.

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation [page 31](#)).



 **Note**

- ◆ A bright hand-held light helps to better see the MIN and MAX markings on the housing.
- ◆ If battery is difficult to see: Use a small mirror to check the electrolyte level (shine a bright hand-held light at a right angle onto the battery cells).

3.12.2 Battery with magic eye

WARNING	
Risk of explosion if magic eye is colourless or light yellow!	
◆	Do not attempt to jump-start vehicle.
◆	Do not check or charge battery.
◆	Renew battery.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

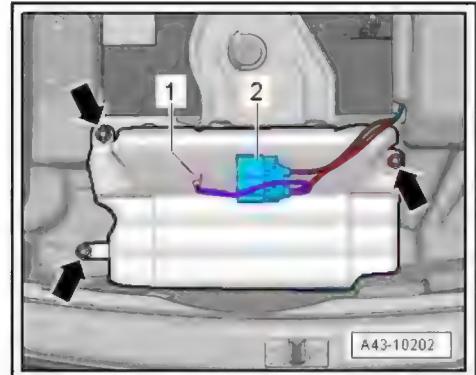
Table of tightening torques for installation:

Component/fastener	[Nm]
Nut on accumulator	9

The battery is located under the luggage compartment floor.

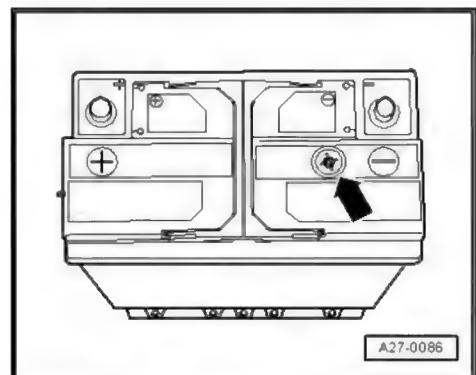
Removal steps:

- Lift luggage compartment floor and secure in position.
- Applies to vehicles with adaptive air suspension: Remove nuts -arrows- and move accumulator to side (leave lines -1- and solenoid valve block -2- connected).
- Take out tool kit box.



Procedure:

- Check battery housing for the following:
 - ◆ Battery terminals are not corroded or damaged
 - ◆ Mechanical damage to battery housing and cover, indicated by electrolyte leakage or crystals at the damaged area
- Damaged batteries must be renewed.
- Before checking electrolyte level: Tap magic eye -arrow- carefully with handle of a screwdriver.
- Read off battery electrolyte level according to colour display. Two different results are possible:



Colour of magic eye Copyright. Copy Measure:

Black or green	Electrolyte level OK: No further measures necessary
Colourless or light yellow	Electrolyte level too low: Battery must be renewed

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation [⇒ page 32](#)).



Note

- ◆ *The magic eye is also referred to as an ALI (acid level indicator).*
- ◆ *The magic eye is only for use in determining the electrolyte level.*
- ◆ *During battery charging or vehicle operation, air bubbles can form underneath the magic eye which could falsify the colour display. Tap magic eye lightly to release any bubbles.*

3.13 Battery: connecting stationary battery charging unit (min. 30A, charging voltage max. 14.8 V on IV characteristic curve)

All models except A7 [⇒ page 34](#)

A7 [⇒ page 36](#)

3.13.1 All models except A7

DANGER

Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ Handling high-voltage wires [⇒ page 7](#).
- ◆ For work in the vicinity of high-voltage components [⇒ page 6](#).

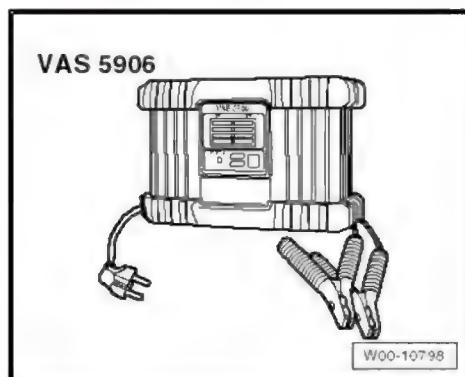
WARNING

Risk of injury if battery terminal clamps are connected incorrectly.

- ◆ Connect positive battery terminal clamp first, then connect negative battery terminal clamp.

Special tools and workshop equipment required

- ◆ Battery charger - VAS 5906-



- ◆ Torque wrench - V.A.G. 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - V.A.G. 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G. 1331- , measuring range 6 to 50 Nm

Tightening torques table:

Component/fastener	[Nm]
Jump-start connection	9
Cap nut	9

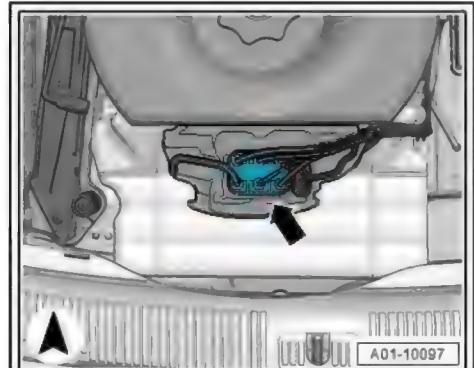
Only applies to vehicles intended for display.

Requirements:

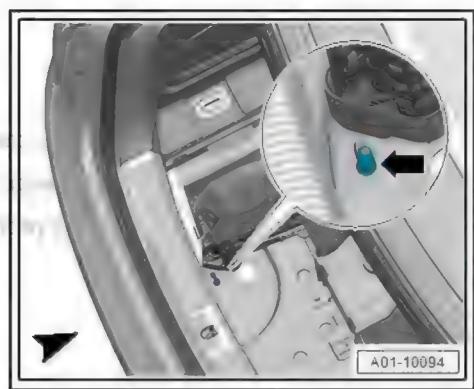
- Ignition switched off.

Removal steps:

- Lift luggage compartment floor and secure in position.
- Take out spare wheel (where applicable).
- Applies to vehicles with air suspension: Detach pressure valve -illustration- from tool kit box (lines remain connected).
- Take out tool kit box.

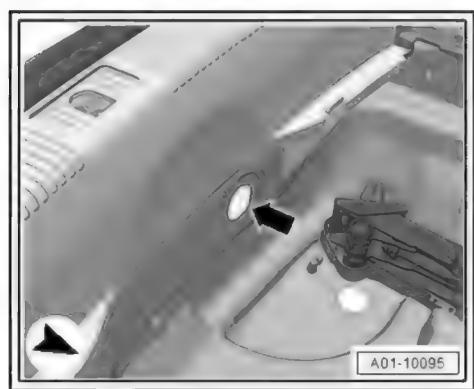


- Unscrew cap nut -illustration-.
- Screw in jump-start connection - 4F0 972 501- and tighten to specified torque (see table of tightening torques for installation [⇒ page 34](#)).
- Applies to vehicles without towing bracket: Remove rubber grommet -illustration- from spare wheel well and store it in glove box.
- Applies to vehicles with towing bracket: Loosen rubber grommet -illustration- in spare wheel well along with wiring harness and pull it slightly inwards into vehicle.

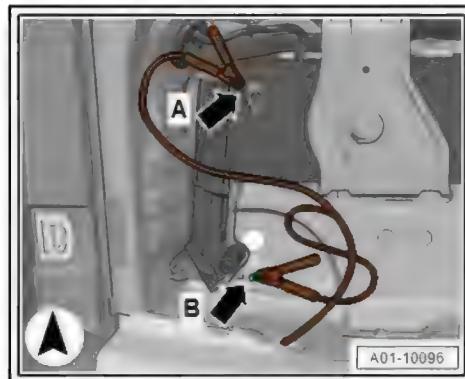


Procedure for connecting battery charger:

- Disconnect charger clamps from battery charger - VAS 5906-.
- Working from above, thread connector end of cable for charger clamps through hole in spare wheel well and down to underside of vehicle.
- Open battery terminal cover (+).



- First connect charger clamp (+) to positive battery terminal -A-.
- Then connect charger clamp (-) to earth point (-) -B- on body.
- Arrange wiring of battery charger - VAS 5906- neatly in spare wheel well.
- Place vehicle tool kit box in spare wheel well.
- Applies to vehicles with air suspension: Attach pressure valve with lines connected.
- Fit luggage compartment floor cover.
- Under vehicle: Connect cable for charger clamps to battery charger - VAS 5906- .
- Switch on battery charger - VAS 5906- and adjust settings as needed.
- Position battery charger - VAS 5906- under vehicle so that it is hidden from view as well as possible, ensuring that ventilation grille of charger is unobstructed.



Procedure for disconnecting battery charger:

Remove in reverse sequence.

3.13.2 A7

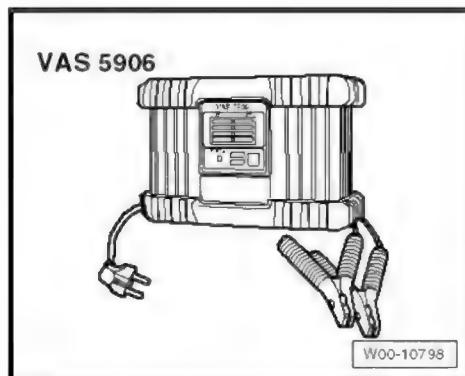
WARNING

Risk of injury if battery terminal clamps are connected incorrectly.

- ◆ Connect positive battery terminal clamp first, then connect negative battery terminal clamp.

Special tools and workshop equipment required

- ◆ Battery charger - VAS 5906-



Only applies to vehicles intended for display.

Requirements:

- Ignition switched off.

Removal steps:

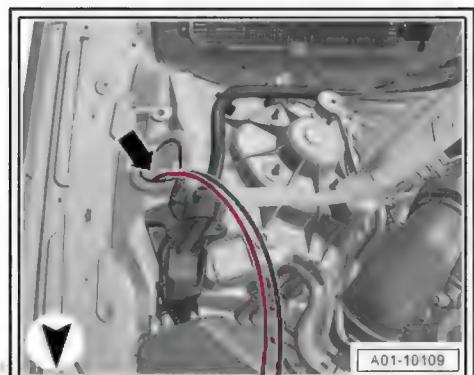
- Remove stopper from wheel housing on right side of vehicle and store it in glove box.

Procedure for connecting battery charger:

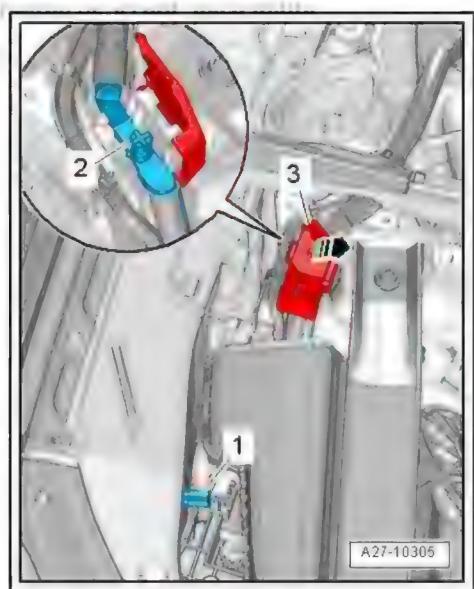
- Guide plug of charging cable from above through wheel housing -arrow- and out from underside of vehicle.



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- Open cover for jump start connection (+) -3- in direction of -arrow-.
- First connect charger clamp (+) to jump start connection (+) -2-, and ensure that charger clamp does not make contact with bonnet when it is closed.
- Then connect charger clamp (-) to earth point (-) -1- on body, and ensure that charger clamp does not make contact with front lid when it is closed.
- Arrange wiring of battery charger - VAS 5906- neatly in engine compartment.
- Switch on battery charger - VAS 5906- and adjust settings as needed.
- Position battery charger - VAS 5906- under vehicle so that it is hidden from view as well as possible, ensuring that ventilation grille of charger is unobstructed.



Procedure for disconnecting battery charger:

Remove in reverse sequence.

3.14 Battery: determining and recording state of charge (SOC)

Vehicles with transport mode ON [⇒ page 37](#)

Vehicles with transport mode OFF [⇒ page 38](#)

3.14.1 Vehicles with transport mode ON

Procedure:

- Read off battery charge level on instrument cluster.
- Use results of test to determine following measures:

State of charge Measure:
 (SOC):

“≥ 80% (12.5 V)” No further measures necessary.

“SOC < 80% (12.5 V) and SOC ≥ 10% (11.6 V)” Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for “Battery defective”.

“< 10% (11.6 V)” Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for “Battery defective”.

- Record charge level in maintenance table.



Note

If it is not possible to read off the state of charge in the instrument cluster, measure the battery's no load voltage [⇒ page 39](#).

3.14.2 Vehicles with transport mode OFF

Special tools and workshop equipment required

- ◆ Battery tester - VAS 6161-

The battery is located under the luggage compartment floor.

Removal steps:

Vehicles without high-voltage system:

- Take hold of grip to lift luggage compartment floor covering and fold it towards front.
- If fitted, remove accumulator and place it to one side with lines connected ⇒ Rep. gr. 43 ; Air suspension; Removing and installing air supply unit .
- Take out tool kit.
- Remove battery terminal covers.

Vehicles with high-voltage system:

- Remove second battery ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .
- Remove battery terminal cover.

Procedure:

- Switch on battery tester - VAS 6161- and select "QC check, new vehicles".
- Use battery tester - VAS 6161- to measure voltage between battery clamps.
- Use results of test to determine following measures:

Battery tester shows:	Measure:
"Battery good"	No further measures necessary.
"Charge fully now"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .
"Battery Faulty"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for "Battery defective".

- Record charge level in maintenance table.



Note

- ◆ When using battery tester - VAS 6161- , ensure that the software is up to date.
- ◆ If it is not possible to measure the state of charge with battery tester - VAS 6161- , measure the battery's no load voltage [⇒ page 39](#).

3.14.3 Measuring no load voltage of battery

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G. 1526 C-

- ◆ Or: digital multimeter - V.A.G. 1715-



Requirements:

- Battery must not be placed under load from connected electrical equipment for at least 2 hours before test.
- Battery must not have been charged for at least 2 hours before test.
- Engine must remain off for at least 2 hours before test.
- Ignition switched off during test.

Removal steps:

Vehicles without high-voltage system:

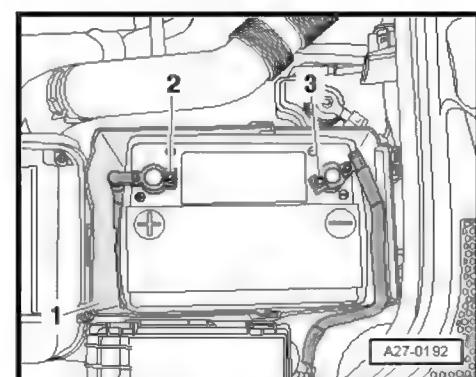
- Take hold of grip to lift luggage compartment floor covering and fold it towards front.
- If fitted, remove accumulator and place it to one side with lines connected ⇒ Rep. gr. 43 ; Air suspension; Removing and installing air supply unit .
- Take out tool kit.
- Remove battery terminal covers.

Vehicles with high-voltage system:

- Remove second battery ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .
- Remove battery terminal cover.

Procedure:

- Use hand-held multimeter - V.A.G. 1526 C- to measure voltage between battery clamps -2- and -3-.
- Use results of test to determine following measures:



**State of charge
(SOC):**

Measure:

"≥ 12.5 V"	No further measures necessary.
"SOC < 12.5 V and SOC ≥ 11.6 V"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .
"< 11.6 V"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for "Battery defective".

Install in reverse sequence.

3.15 Mirror hanger indicating defective battery: renewing battery on affected vehicles

Only for vehicles with mirror hanger for "Battery defective".

Procedure:

- Wait until shortly before vehicle delivery, then renew battery according to instructions in workshop manual ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

3.16 Data sheet for Radio Equipment Directive: printing and placing in glove compartment

As part of the European Union's Radio Equipment Directive (RED 2014/53/EU), legislation requires that a data sheet be provided containing information regarding which radio frequencies are used.

The Radio Equipment Directive data sheet can be downloaded at www.audi.com/generalinfo.

- Print out data sheet (same language as owner's literature) and fold it.
- Place data sheet in glove compartment.



Note

- ◆ *Only markets within the EU.*
- ◆ *The data sheet applies to all vehicles across Europe; it can therefore be printed out in advance and kept at hand.*

3.17 Brake fluid: changing



WARNING

Risk of accident if the brake pedal has too much free play.

- ◆ Make sure that the brakes work properly before the vehicle is driven on the road.



WARNING

Risk of injury due to caustic brake fluid.

- ◆ Avoid contact with skin.

CAUTION

Risk of damage due to improper handling of brake fluid.

- ◆ Avoid contact with vehicle paint.
- ◆ Avoid contact with liquids containing mineral oils (oil, petrol, cleaning agents).

Special tools and workshop equipment required

- ◆ Brake filling and bleeding equipment - VAS 5234-

VAS 5234



W00-11277

- ◆ Tool set for brake bleeding - VAS 6564-

VAS 6564



W00-11595

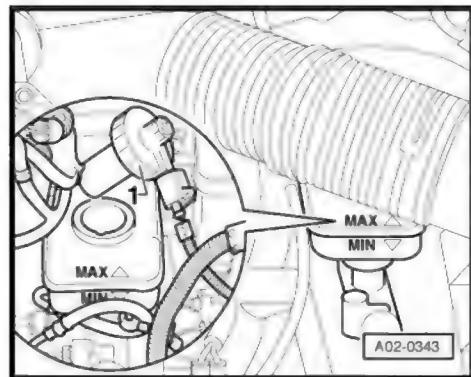
Table of test values and procedure guidelines:

The value given in the table is for one brake caliper, i.e. if there are two bleeder screws on one caliper, the sum of the quantities discharged from both bleeder screws must equal the value given in the table.

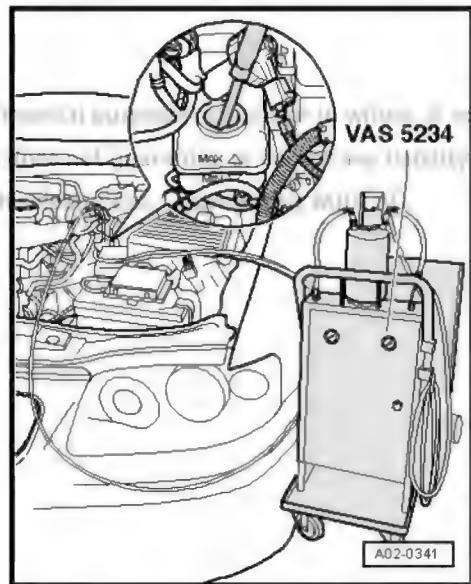
Sequence of opening bleeder screws:	Quantity of brake fluid to discharge:
Brake calipers	
Front axle on driver's side	1. 0.20 ltr.
Front axle on passenger's side	2. 0.20 ltr.
Rear axle on driver's side	3. 0.30 ltr.
Rear axle on passenger's side	4. 0.30 ltr.
Clutch slave cylinder	5. 0.15 ltr.
⇒ Total quantity, automatic gearbox	1.00 ltr.
⇒ Total quantity, manual gearbox	1.15 ltr.

Step 1 - connecting brake filling and bleeding equipment:

- Unscrew filler cap -1- from brake fluid reservoir.



- Use extraction hose included in brake filling and bleeding equipment - VAS 5234- to extract brake fluid from reservoir (with strainer installed) until fluid is level with bottom edge of strainer. Make sure that no more fluid flows back into reservoir from strainer after extracting fluid.



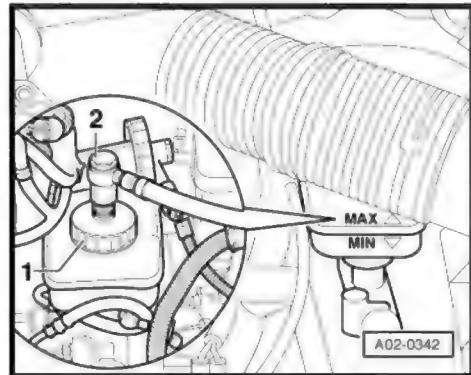
- Screw adapter -1- onto brake fluid reservoir.
- Connect filling hose -2- included with brake filling and bleeding equipment - VAS 5234- to adapter.
- Set pressure on brake filling and bleeding equipment - VAS 5234- (see operating instructions).

Step 2 - bleeding and filling brake system:

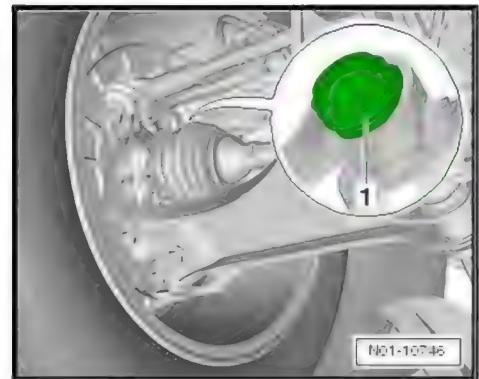
If there are two bleeder screws on each brake caliper, first bleed the inner, then the outer bleeder screw.

- Raise vehicle [page 9](#).

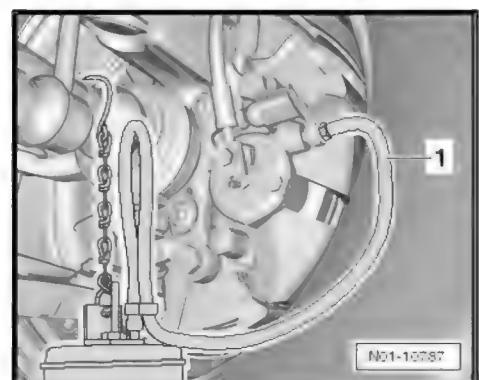
Front axle:



- Brake caliper (driver's side): Remove cap(s) -1- from bleeder screw(s).



- Fit bleeder hose -1- attached to collector container onto bleeder screw from inside of rim.
- Open bleeder screw and allow brake fluid to discharge. Refer to table for correct quantity of brake fluid to discharge [⇒ page 41](#).
- Close bleeder screw.
- If there are two bleeder screws on each brake caliper: Repeat procedure with second bleeder screw.
- Refit cap on bleeder screw(s).
- Repeat procedure on passenger's side.

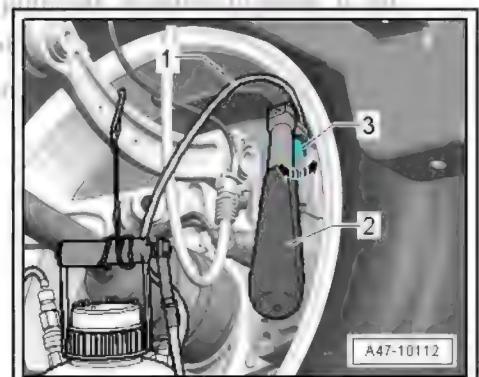


Rear axle:

- Brake caliper (driver's side): Remove cap(s) -1- from bleeder screw(s).
- Take reversible ratchet and appropriate socket from tool set for brake bleeding - VAS 6564- and fit together.



- Run bleeder hose -1- from inside of rim through reversible ratchet -2- and socket -3- and fit onto bleeder screw.
- Open bleeder screw with ratchet -2- and allow brake fluid to discharge. Refer to table for correct quantity of brake fluid to discharge [⇒ page 41](#).
- Close bleeder screw.

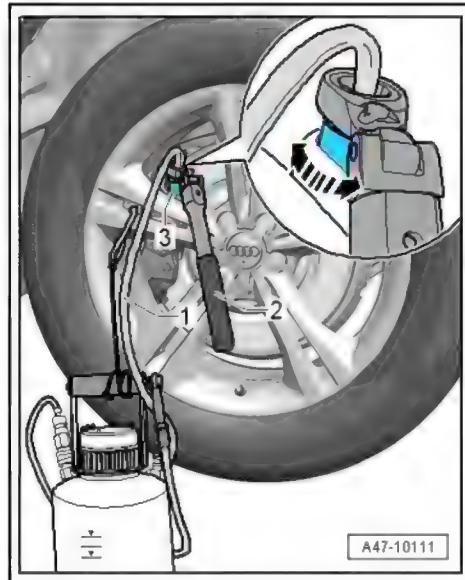


- If there are two bleeder screws on each brake caliper: Working from outside of rim, apply reversible ratchet -2- and socket -3- and repeat procedure.
- Refit cap on bleeder screw(s) on brake caliper.
- Repeat procedure on passenger's side.

Step 3 - bleeding clutch slave cylinder

Only for vehicles with manual gearbox

- Remove components necessary for access; refer to ⇒ Manual gearbox; Rep. gr. 30 ; Clutch mechanism; Bleeding clutch mechanism .
- Fit bleeder hose attached to collector container -1- onto bleeder screw of clutch slave cylinder.
- Open bleeder screw and allow correct amount of brake fluid to flow out (see table of test values and procedure guidelines ⇒ [page 41](#)).
- Close bleeder screw and fit cap.



Step 4 - final steps:

- Close filling lever of brake filling and bleeding equipment - VAS 5234- .
- Detach filling hose from adapter.
- Unscrew adapter from brake fluid reservoir.
- Check brake fluid level and adjust if necessary (depending on brake pad wear) ⇒ [page 45](#) .
- Screw cap onto brake fluid reservoir.
- Operate clutch pedal several times.
- Check pedal pressure and free travel: No more than $\frac{1}{3}$ of total pedal travel.
- Make sure that the brakes work properly before the vehicle is driven on the road.
- If free travel of brake pedal is greater than specified, or if brake function is impaired: Check brake system for leaks and renew brake fluid again.

Note

- ◆ The bleeder hose must fit tightly on the bleeder screw to prevent air from entering the brake system.
- ◆ In the case of certain wheel combinations, the wheels may have to be removed.
- ◆ With the aid of the tool set for brake bleeding - VAS 6564- , the rear brakes or, depending on version, the front and rear brakes can be bled without having to remove the wheels.
- ◆ Use genuine Audi brake fluid; see Electronic parts catalogue (ETKA).
- ◆ Do not reuse brake fluid.
- ◆ Always observe the relevant environmental regulations for disposal of brake fluid.

3.18 Brake fluid (vehicles older than 12 months): changing

Only applies to vehicles older than 12 months (from date of manufacture).

Procedure:

- Change brake fluid [⇒ page 40](#).

3.19 Brake fluid: checking fluid level

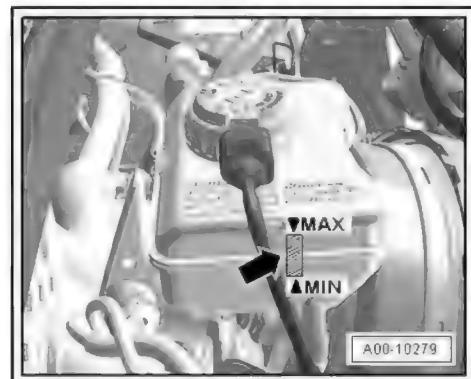
Table of test values and procedure guidelines:

Type of service:	Fluid level specification:
Delivery Inspection	Fluid level must be at MAX marking.
Brake fluid change	Fluid level must be between MAX marking and MIN marking according to wear level of brake pads.

Checking the brake system for leaks is a repair measure and should be charged separately.

Procedure:

- Evaluate brake fluid level according to markings -arrows- on brake fluid reservoir.
- Perform the following measures according to the results of the check:



Fluid level:	Evaluation/measure:
Above MAX marking	Extract brake fluid.
Below specified level	Carry out brake system leak test ⇒ Brake system; Rep. gr. 47 ; Hydraulic system; Leak test .



Note

When the vehicle is in use, the fluid level drops due to wear and automatic adjustment of the brake pads.

3.20 Brake system: checking condition of brake hoses, and checking that caps are fitted on bleeder screws

Requirements:

- Brake hoses must not touch any components when steering is on full lock.
- Brake hoses must not be twisted.

Procedure:

- Check that all brake hoses are secured properly; when doing so, ensure that the conditions listed are met:
- Check all brake hoses for abrasion, porosity, blistering and cracking.
- Check that brake connections are seated correctly, and check for corrosion and leaks.
- If faults are found on brake hoses: Repair/renew relevant component.
- Check that caps are fitted and secured on bleeder screws of all brake calipers.
- Renew any missing caps.

3.21 Brake pads: checking thickness

Special tools and workshop equipment required

- ◆ Test pin - T40139- / test pin - T40139A- : Use the side with the thin probe (brake symbol) to measure brake pad thickness.

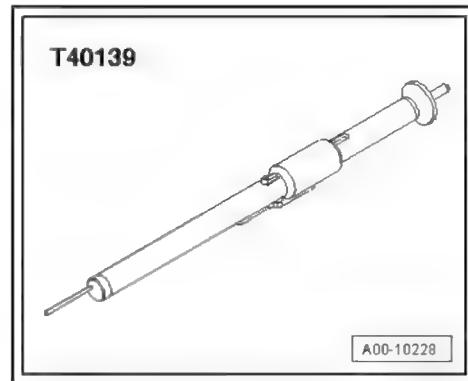


Table of test values and procedure guidelines:

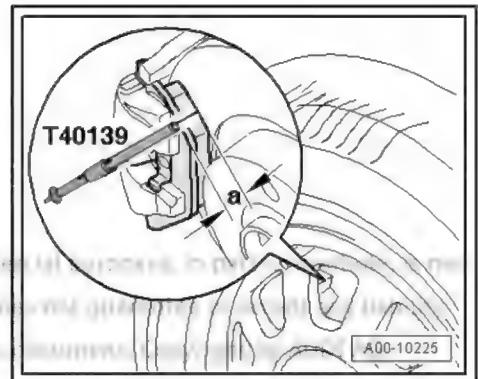
Axle	Brake pad wear limit including backplate and damper plate [mm]
Front axle:	9
Rear axle:	8

Check only the thickness of the outer brake pads.

Procedure:

- Before you begin: Push sliding ring towards tip of test pin as far as it will go.
- Bring tip of test pin into contact with brake disc.
- Slide test pin towards brake pad until test pin makes contact with backplate of brake pad.

- Remove test pin and read off brake pad wear value -a- from scale on tool.
- Repeat procedure for all wheels.
- If brake pad thickness has reached wear limit (see table of test values and procedure guidelines **⇒ page 46**): Renew brake pads \Rightarrow Brake system; Rep. gr. 46 ; Removing and installing brake pads .



 Note

- ◆ When removing the test gauge, take care not to move the sliding ring. This would give an incorrect measurement.
- ◆ Note where the test gauge makes contact on the rear of the brake pad and include the thickness of the damper plate in the calculation if necessary.
- ◆ In the case of certain wheel combinations, the wheels must be removed.
- ◆ On S and RS models, it may be necessary to measure the brake pads from the inside of the wheels.

3.22 Brake discs: checking for surface rust and operating brakes to clean if necessary

Checking brake discs \Rightarrow page 47

Operating brakes to clean brake discs \Rightarrow page 47

3.22.1 Checking brake discs

Procedure:

- Check outside of all brake discs for surface rust.
- If necessary, operate brakes to clean brake discs
⇒ [page 47](#) .

 **Note**

The brake discs can be damaged irreparably if surface rust is not removed at the specified intervals.

3.22.2 Operating brakes to clean brake discs

Procedure:

- Accelerate vehicle to 40 km/h, then brake gently to 10 km/h (do this five times).
- Accelerate vehicle to 40 km/h, then brake sharply to a standstill (do this five times).

The wheels should not spin or lock during acceleration and braking.

3.23 Parking brake: releasing

Mechanical parking brake [⇒ page 48](#)

Electromechanical parking brake [⇒ page 48](#)

3.23.1 Mechanical parking brake

Procedure:

- Release parking brake.

3.23.2 Electromechanical parking brake

Procedure:

- Press brake pedal, then press switch for electromechanical parking brake.

3.24 Tyres: checking condition and wear pattern, and checking and recording tread depth

Special tools and workshop equipment required

- ◆ Test pin - T40139- : Use the side with the thick probe and shoulder (scale marked with tyre symbol) to measure tread depth.

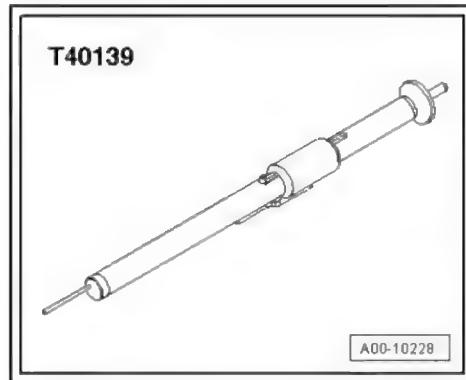


Table of test values and procedure guidelines:

Country-specific regulations for minimum tread depth apply; for countries not listed, evaluate values according to the country's specifications.

Country	Minimum tread depth [mm]
EU countries	1.6 ¹⁾
Brazil	1.6
China	1.6
India	1.6
Japan	1.6
Norway	1.6 ¹⁾
Russia	1.6
Switzerland	1.6
Turkey	1.6
Ukraine	1.6 ¹⁾
USA	1.6

1) Larger values for winter tyres where these are mandatory

Performing wheel alignment is a repair measure and should be charged separately.

Step 1 - checking condition:

- Check for and remove any foreign bodies in tyre tread.
- Check all tyres for following types of damages:
 - ◆ Cuts, cracks, tears
 - ◆ Scuffing or flattened areas on tyre tread
 - ◆ Porous sidewalls
 - ◆ Blisters on sidewalls
- If damage is found: Renew tyres.

Step 2 - checking tyre wear pattern:

- Check tyre wear pattern of front wheels; check for the following:
 - ◆ Feathering on tread indicating possible incorrect toe setting
 - ◆ One-sided tread wear indicating possible incorrect camber
- If the above types of wear are found: Check wheel alignment to determine the cause.

Step 3 - checking tread depth:

- Measure tread depth on all tyres (including spare tyre) at several points using test pin - T40139-. Uneven tread depth indicates damage.
- Record average measurement for each tyre in Maintenance table.
- If minimum tread depth has been reached (as specified for your country; see table of test values and procedure guidelines [⇒ page 48](#)): Renew tyre.



Note

Vehicles with four-wheel drive must be fitted with tyres with the same tread pattern. Otherwise the centre differential may be damaged.

3.25 Tyres: checking tyre pressures and adjusting if necessary



Note

The tyre valves must be sealed with valve caps. Otherwise, dirt could enter the valve, which will then become blocked and will no longer seal properly.

Front and rear axles [⇒ page 50](#)

Spare wheel and temporary spare wheel [⇒ page 50](#)

3.25.1 Front and rear axle

The tyre pressure specifications are listed on the sticker on the inside of the driver's door.

Tyre sizes not listed: See Wheel/tyre guide for tyre pressure specification ⇒ *Wheel/Tyre Guide; Rep. gr. 44 ; Wheels, tyres, vehicle geometry; Tyre pressures* .

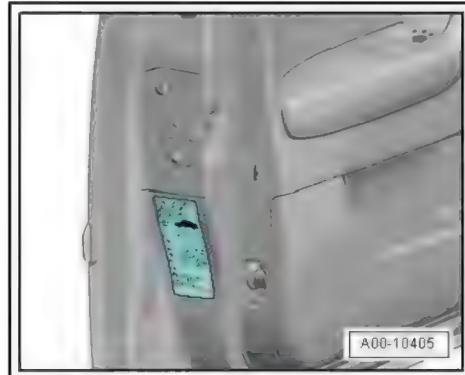
Procedure:

- Check tyre pressure of all tyres.
- If necessary, adjust to correct tyre pressures.



Note

- ◆ *The tyre pressures listed only apply to cold tyres. When the tyres are warm, the actual pressures will be higher, but must not be reduced.*
- ◆ *Tyre pressures which significantly differ from the specification may be the result of a defect. If this occurs, check the tyres and inform the customer if necessary.*
- ◆ *Always adjust to max. tyre pressure specified on vehicles with stickers indicating tyre pressures for speed range >250km/h (vehicles without speed limiter system; max. tyre pressures are obligatory).*



3.25.2 Spare wheel and temporary spare wheel

The following parameters apply to the tyre pressure specifications:

- Spare wheel with standard-size tyre: Inflate to maximum tyre pressure indicated on tyre pressure sticker.
- Temporary spare wheel: The correct tyre pressure is indicated on the sidewall.

Procedure:

- Check tyre pressure of spare wheel/temporary spare wheel.
- If necessary, adjust to correct tyre pressures.



Note

Depending on equipment version, there may only be a tyre repair kit supplied; see Maintenance table.

3.26 Tyres (except spare wheel): checking tyre pressures and adjusting to 3.5 bar if necessary



Note

The tyre valves must be sealed with valve caps. Otherwise, dirt could enter the valve, which will then become blocked and will no longer seal properly.

Procedure:

- Check tyre pressure of all tyres.
- If necessary, adjust tyre pressure to 3.5 bar and record pressure in maintenance table.

3.27 Tyre Pressure Loss Indicator: storing changed tyre pressures



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

The Tyre Pressure Loss Indicator must be initialised at every inspection (after the tyre pressures have been checked or changed).

Requirements:

- The inflation pressures of all tyres must be adjusted to the correct values before the pressures are stored.

Procedure:

- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«, navigate through following menu structure:
 - ◆ Servicing & checks
 - ◆ Tyre pressure monitoring
 - ◆ Store tyre pressures
- Use MMI rotary pushbutton to select option to store tyre pressures.

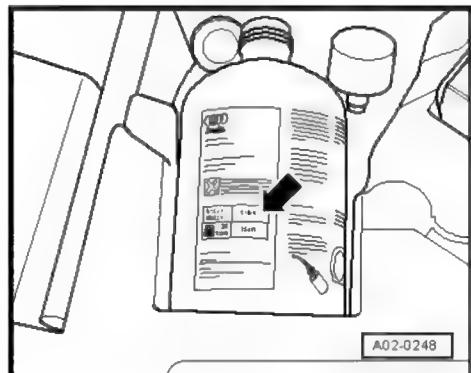
3.28 Tyre repair kit: checking that set is complete, and checking and recording expiry date

The tyre repair kit is located under the luggage compartment floor.

Procedure:

- Check that the following components of the tyre repair kit are present:
 - ◆ Compressor

- ◆ Tyre filler bottle incl. filler hose
- Take out the bottle and check the expiry date (printed on bottle -arrow-).
- Record expiry date in Maintenance table.
- If expiry date has been exceeded or if bottle has already been used: Renew tyre filler bottle.



3.29 Wheel bolts: tightening to specified torque

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1332-, measuring range 40 to 200 Nm
- ◆ Or: torque wrench - V.A.G 1576-, measuring range 80 to 400 Nm
- ◆ Tool to secure wheel nut caps 8Z0.012.287

Table of test values and procedure guidelines:

Fastener	Tightening torque [Nm]
Wheel bolts	120

The adapter for loosening and tightening anti-theft wheel bolts is included in the vehicle tool kit.

Procedure:

- Remove wheel bolt caps.
- Tighten wheel bolts in a diagonal sequence to specified torque (see table of test values and procedure guidelines).
- Press wheel bolt caps on using tool 8Z0.012.287 so that they are correctly seated.
- If adapter for anti-theft wheel bolts was used from tool kit: Put adapter back in tool kit.

3.30 Suspension struts on front and rear axle: removing locking elements and correctly fitting bump stops



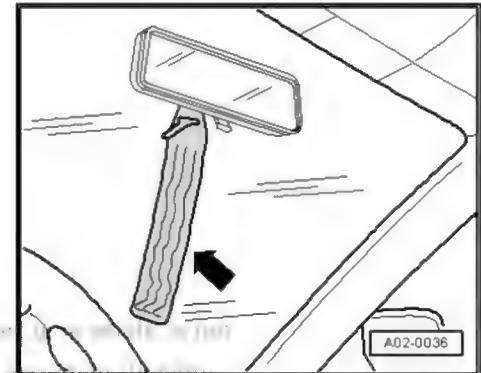
Note

- ◆ These vehicles are identified by a coloured tag fixed to the mirror -arrow-.
- ◆ It is not necessary to remove the wheels to perform this operation.

Suspension struts on front axle ➤ [page 53](#)

Suspension struts on rear axle ➤ [page 54](#)

Pressing in bump stop ➤ [page 54](#)



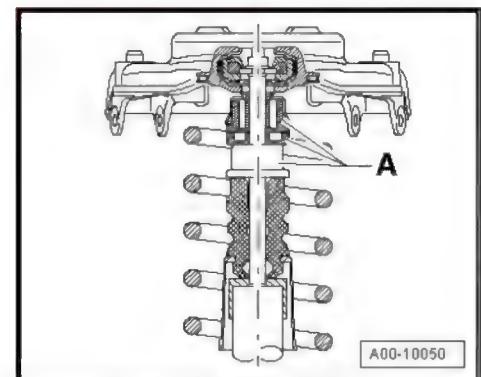
3.30.1 Suspension struts on front axle

Requirements:

- Vehicle suspension extended

Procedure:

- Push all locking elements -A- off piston rod.



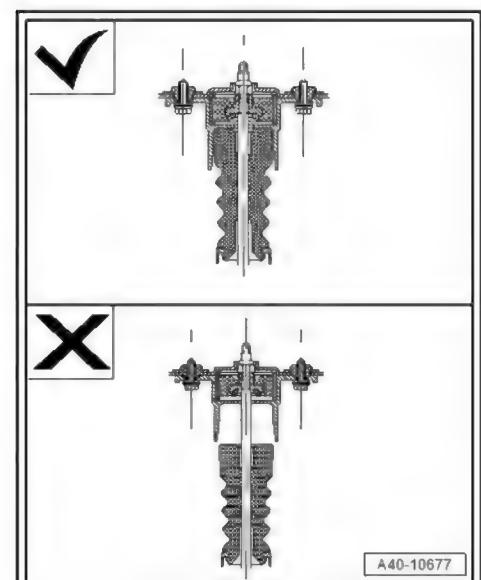
- Press bump stops all the way into shock absorber mountings (make sure they are straight).



Note

With vehicle suspension extended, check that all bump stops are firmly seated in shock absorber mountings.

- If necessary, use a suitable tool to press any loose bump stops into shock absorber mountings.
- When all locking elements have been removed from vehicle:
 Remove tag on interior mirror.



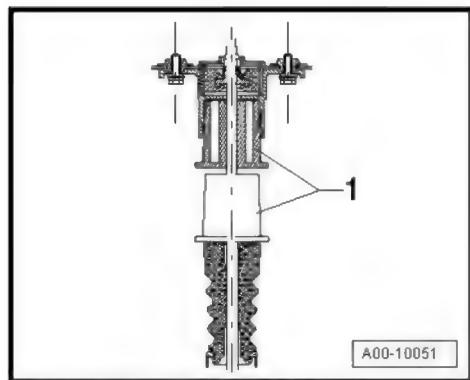
3.30.2 Suspension struts on rear axle

Requirements:

- Vehicle suspension extended

Procedure:

- Push all locking elements -1- off piston rod.

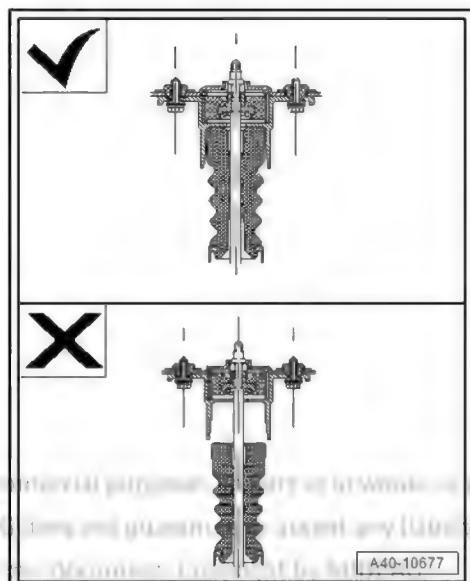


- Press bump stops all the way into shock absorber mountings (make sure they are straight).



With vehicle suspension extended, check that all bump stops are firmly seated in shock absorber mountings.

- If necessary, use a suitable tool to press any loose bump stops into shock absorber mountings.
- When all locking elements have been removed from vehicle: Remove tag on interior mirror.



3.30.3 Pressing in bump stop

Special tools and workshop equipment required

- ◆ T40401 Lever for mounting bump stops
- ◆ Soap-based lubricant, e.g. tyre assembly paste

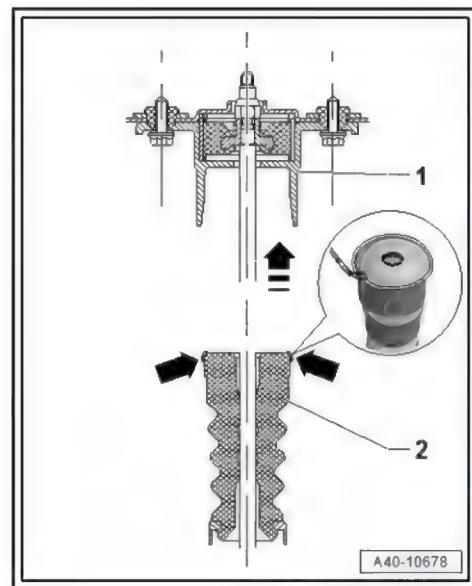
Procedure:

- Remove coarse dirt from top edge of loose bump stop and coat with tyre assembly paste.
- Press bump stop firmly into shock absorber mounting by hand or using lever - T40401- .



Note

Lever - T40401- can only be used on the rear axle.



3.31 Axles (front and rear): checking components for play, secure attachment and damage, and checking protective boots

The following applies to all components shown below:

- There must be no noticeable or visual play.
- As a rule you can identify damage to the boots/drive shaft boots by emerging grease.
- Check that retaining rings and spring-type clips are seated correctly.

Front axle ➔ [page 55](#)

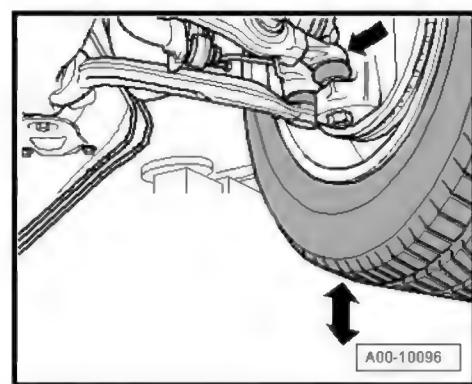
Rear axle ➔ [page 57](#)

3.31.1 Front axle

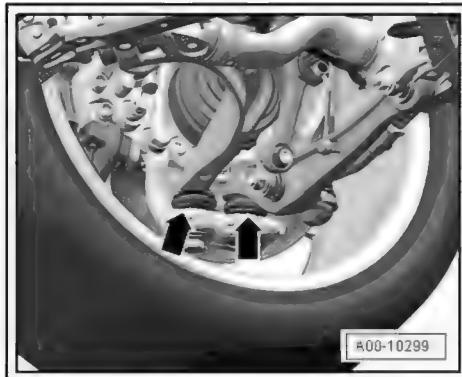
Proceeding from the front wheel, check the following components for damage and damage to the protective boots:

Track control links, guide links and coupling rod:

- Check relative movement between wheel bearing housing and track control link/guide link.

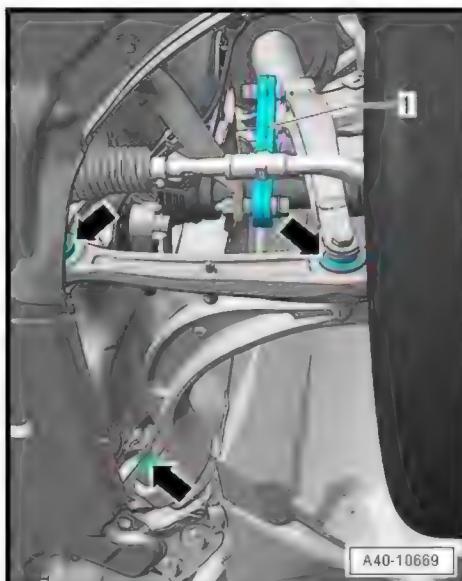


- Track control link and guide link: Check boots -arrows- of track control link and guide link joints all around for damage and make sure they are seated correctly.
- Check swivel joints for play.



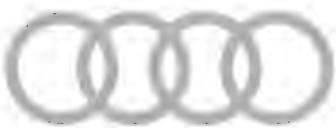
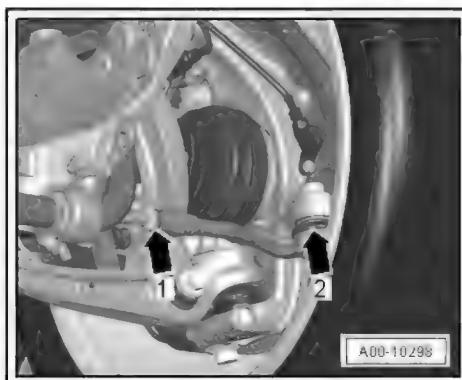
- Check all bonded rubber bushes of track control links and guide links -arrows- for play.
- Check play at coupling rod -1-.

Track rod ball joint:



- Check boot -2- for track rod ball joint all around for damage and make sure it is seated correctly.
- Check play at track rod ball joint.

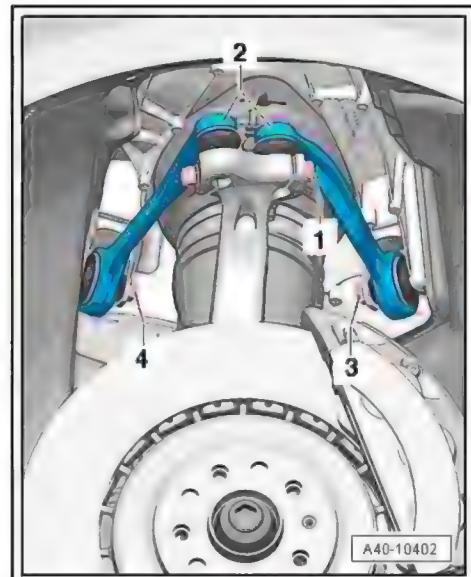
Upper links:



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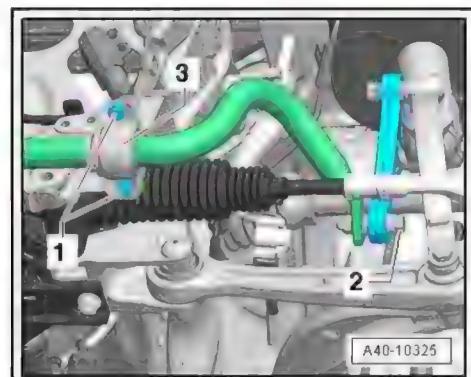
- Upper links -2-: Check bushes of swivel joints all around for damage and make sure they are seated correctly.
- Check swivel joints for play.
- Check bonded rubber bushes -3- and -4- of swivel joints (top) for play.

Anti-roll bar:

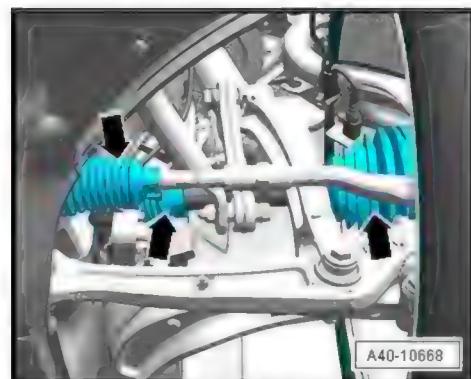


- Check anti-roll bar bush -3- for damage.

Drive shaft and steering rack:



- With steering turned: Check drive shaft boots -arrows- all around for damage and make sure they are seated correctly.
- Check boot -arrow- of steering rack all around for damage and correct seating.
- Repeat checks for components on opposite side of vehicle.
- If faults are found on any of the above components: Renew relevant component.

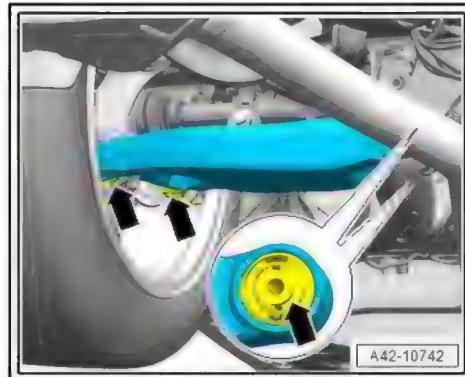


3.31.2 Rear axle

Lower and upper transverse links:

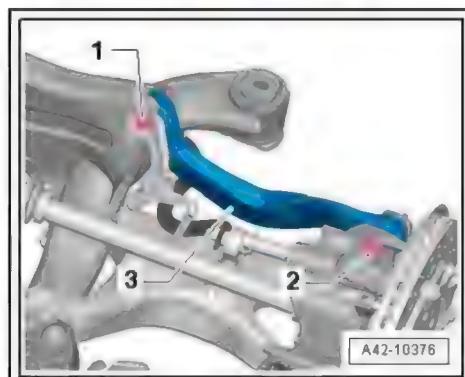
- Check relative movement between wheel bearing housing and both transverse links.

- Check all bonded rubber bushes -arrows- of lower transverse link for play.



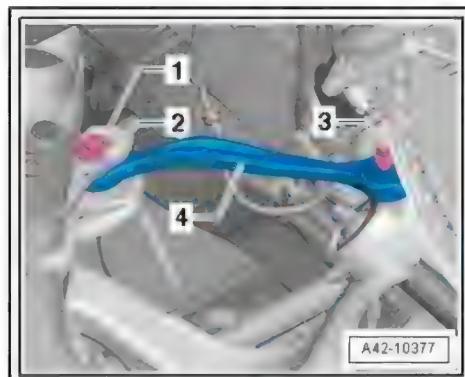
- Check all bonded rubber bushes of upper transverse link -3- for play.

Track rod:



- Check play at bonded rubber bushes of track rod -4-.

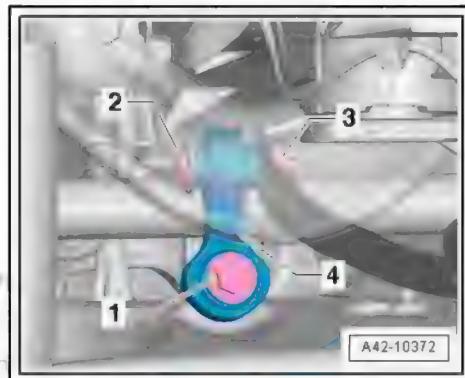
Coupling rod and anti-roll bar:



- Check play at coupling rod -4-.



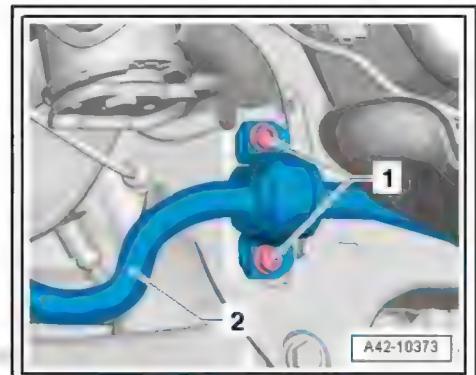
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- Check anti-roll bar bush -1- for damage.

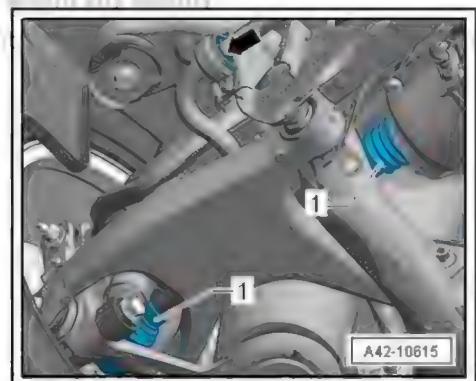
Drive shaft:

Only applies to vehicles with four-wheel drive.



- Check drive shaft boots -1- all around for damage and make sure they are seated correctly.

- Repeat checks for components on opposite side of vehicle.
- If faults are found on any of the above components: Renew relevant component.



3.32 Engine, gearbox, final drive and steering: checking for leaks and damage



Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ For work in the vicinity of high-voltage components
⇒ [page 6](#) .

Applies to vehicles up to and including model year 2014: For inspection every 60,000 km (38,000 miles)/4 years, remove noise insulation.

Applies to vehicles from model year 2015 onwards: Remove noise insulation for every inspection.

Removal steps:

- If necessary, remove noise insulation ⇒ [page 15](#) .

Procedure:

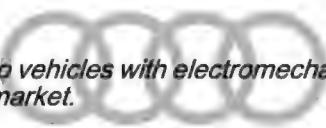
- Check engine and engine ancillaries from below for leaks and damage.
- Check visible area of belt drives for damage.
- Check radiator and cooling circuit for leaks and damage.
- Check refrigerant circuit for damage (check air conditioner compressor, condenser and refrigerant lines including connections).
- Check gearbox, final drive and steering for leaks and damage.
- If faults are found: repair or renew relevant component.

3.33 Steering boots and inner hose clips: checking secure seating



Note

Only applies to vehicles with electromechanical power steering in the Chinese market.

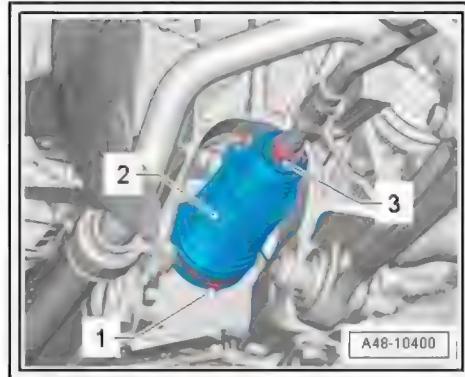


Removal steps:

- If necessary, remove noise insulation ⇒ [page 15](#).

Procedure:

- Check that steering boot -2- and inner hose clip -1- are seated securely.
- If steering boot and/or hose clip is loose, fit components correctly and tighten them to correct torque ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering rack; Removing and installing boot .



3.34 Vehicle (from below): checking for damage

Procedure:

- Check underbody carefully and thoroughly for damage and loose fasteners.
- If faults are found: Renew missing fastener or damaged component.

3.35 Underbody: checking trim, wheel housing liners, side members and pipes/wiring for damage, and checking that they are properly secured

Procedure:

- Check all underbody trim panels and wheel housing liners for tears and cracks.
- Use your hands to check that all underbody trim panels and wheel housing liners are secured correctly and check for missing fasteners.
- Inspect side members for deformations.
- Check visible area of pipes/wiring and connections for damage and ensure they are secured correctly.
- If faults are found: Renew missing fastener or damaged component.

3.36 Roof insert: checking operation



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Only applies to equipment version with sliding/tilting sunroof.

Cleaning and lubricating the roof insert is a repair measure and should be charged separately.

Procedure:

- Open and close roof system completely and check for unusual noises and stiffness/sticking.
- If there is unusual noise or stiffness/sticking: Clean and lubricate roof insert [⇒ page 61](#).

3.37 Roof insert - sliding/tilting sunroof: cleaning and lubricating



WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Special tools and workshop equipment required

- ◆ Lubricating paste - G 060 751 A2-
- ◆ Lubricating paste - G 052 141 A2-
- ◆ Cleaning solution - D 009 401 04-
- ◆ Industrial vacuum cleaner, e.g. wet/dry vacuum cleaner - VAS 5128-
- ◆ Commercially available paintbrush: approx. 15 mm wide and bent by approx. 40°
- ◆ Fine-pored sponge (e.g. a piece of household sponge without a scouring surface)

Cleaning and lubricating the roof insert is a repair measure and should be charged separately.

Protect vehicle interior from becoming dirty.

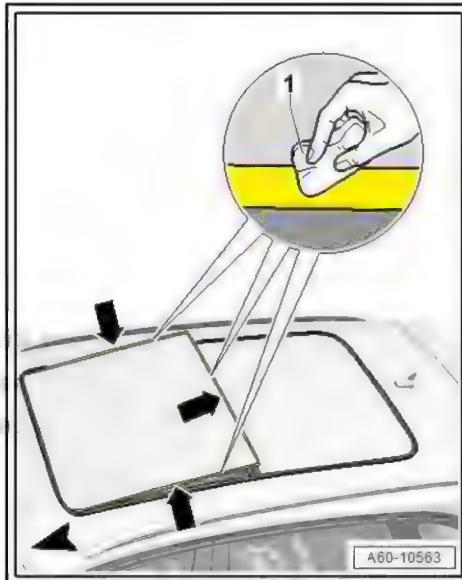
Step 1 - cleaning and lubricating glass panel seal:

- Tilt open glass panel at rear.
- Remove all accessible grease and dirt residue from glass panel seal using cleaning solution - D 009 401 04- and a lint-free cloth.

- Use a fine-pored sponge -1- to lubricate sides and rear of glass panel seal -arrows- with lubricating paste - G 052 141 A2-. Make sure that no coarse residue remains visible after applying lubricant.

- Open glass panel completely.
- Using cleaning solution - D 009 401 04- and a lint-free cloth, remove any grease or dirt residue from front of glass panel seal in area that has not been lubricated yet.

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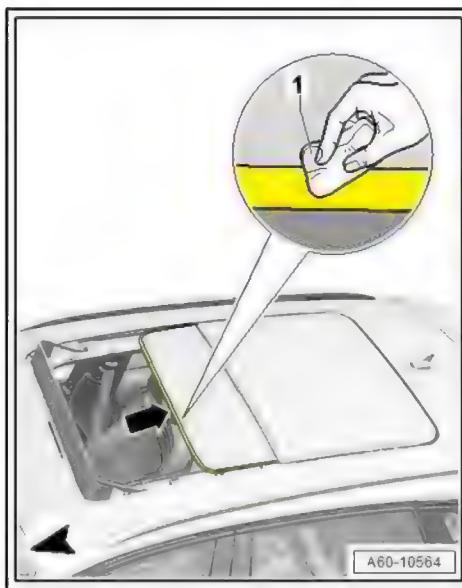


- Use a fine-pored sponge -1- to lubricate front of glass panel seal -arrow- with lubricating paste - G 052 141 A2-. Make sure that no coarse residue remains visible after applying lubricant.

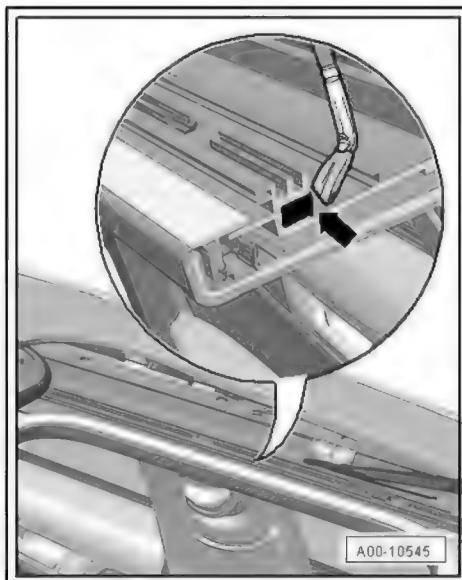
Step 2 - cleaning and lubricating guide rail:

Glass panel opened completely.

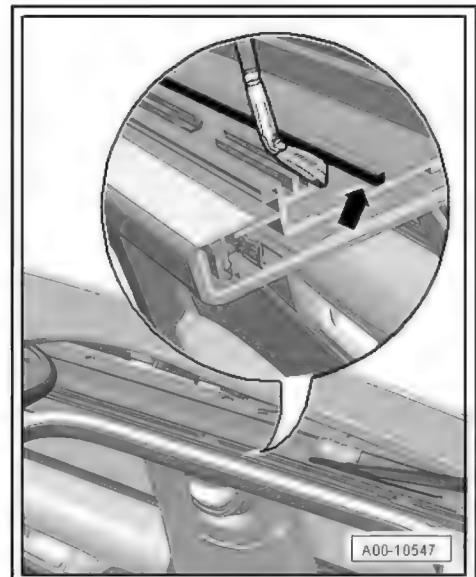
- First use an industrial vacuum cleaner to remove any loose residue from guide rails.
- Remove grease and dirt from guide rails with a lint-free cloth.



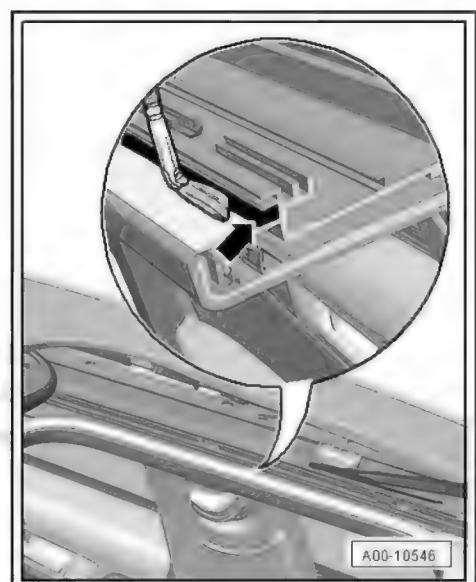
- Use a paintbrush to lubricate inside of guide rail -arrow- with lubricating paste - G 060 751 A2- .



- Use a paintbrush to lubricate outside of guide rail -arrow- with lubricating paste - G 060 751 A2- .



- Use a paintbrush to lubricate side guide rail of sliding headliner -arrow- with lubricating paste - G 060 751 A2- .
- Remove surplus lubricant on guide rails with a lint-free cloth.
- Repeat procedure on opposite side of vehicle.
- Open and close roof system completely and check again for surplus lubricant.



3.38 Roof insert - panorama sunroof: checking, cleaning and lubricating



WARNING

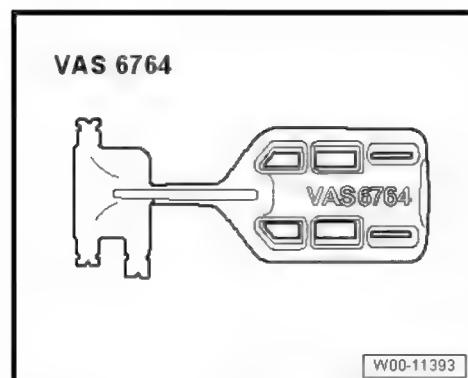
Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#) .

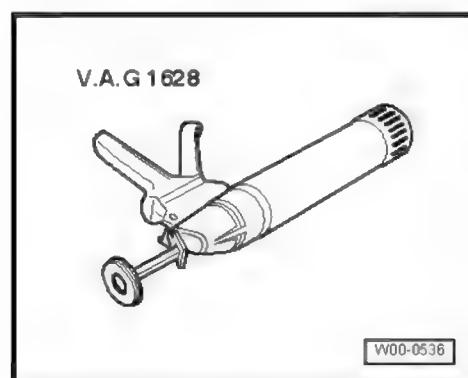
Special tools and workshop equipment required

- ◆ Lubricating paste - G 060 751 A2-
- ◆ Lubricating paste - G 052 141 A2-
- ◆ Cleaning solution - D 009 401 04-

- ◆ Grease stone - VAS 6764-



- ◆ Hand-cartridge gun - V.A.G 1628-



- ◆ Industrial vacuum cleaner, e.g. wet/dry vacuum cleaner - VAS 5128-
- ◆ Measuring cup
- ◆ Commercially available paintbrush: approx. 15 mm wide and bent by approx. 40° using workshop equipment
- ◆ Fine-pored sponge (e.g. a piece of household sponge without a scouring surface)



Note

First carry out a visual check to determine which type of sunroof is fitted on the vehicle.

- Open glass panel completely.
- **Carry out a visual check to determine which type of grease has been used in area of guide rails.**
- ◆ **White/grey grease G 060 751 A2:** Clean and lubricate according to method used to date (description below)
- ◆ **Transparent grease (special lubricant):** Perform functional check only; proceed as follows:

Procedure:

- Open and close sunroof completely.

This must not produce any vibrations or noises (rattling, squeaking, clicking) other than those of normal operation.



Note

Please refer to TPI if normal operating sounds are accompanied by other noises or vibrations on a sunroof version with new spray-on grease.

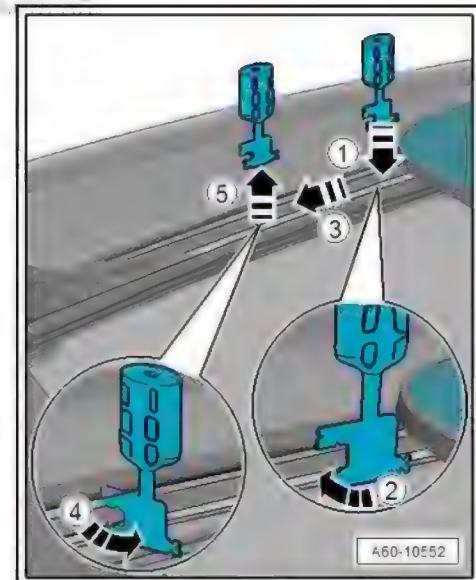
Cleaning and lubricating the roof insert is a repair measure and should be charged separately.

Protect vehicle interior from becoming dirty.

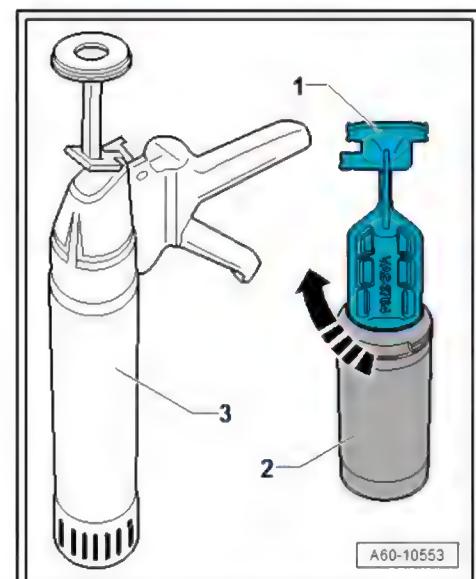
Only applies to sunroof version with white/grey grease
 G 060 751 A2:

Step 1 - cleaning and lubricating guide rails:

- Open sunroof sun blind completely.
- Open glass panel completely.
- First use an industrial vacuum cleaner to remove any loose residue from guide rail.
- Insert grease stone - VAS 6764- in rear section of guide rail -1- and turn 90° into contour of rail -2-.
- Then pull tool into centre of guide rail opening -3-, turn through 90° again -4- and remove -5-.
- Clean front section of guide rail as described in previous step. To do so, insert grease stone in front section of guide rail (near wind deflector) and move it to centre of guide rail.
- Repeat cleaning procedure several times as required.
- Remove grease and dirt deposits from guide rail with a lint-free cloth.
- Repeat procedure on opposite side of vehicle.



- Screw grease stone - VAS 6764- -1- onto thread of lubricant cartridge -G 060 751 A2- -2- and insert into hand-cartridge gun - V.A.G 1628- -3-.

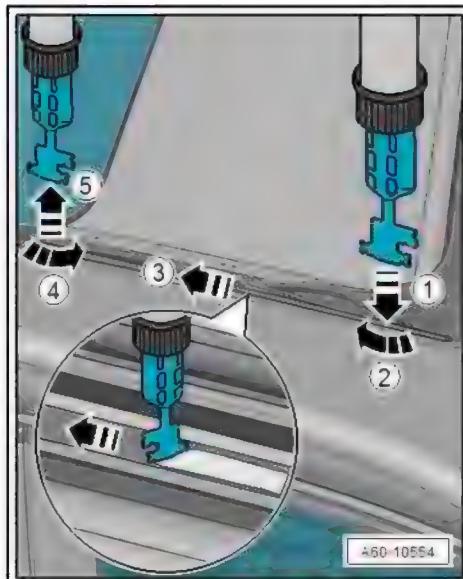


- Insert grease stone attached to hand-cartridge gun at front end of guide rail -1- and turn 90° into contour of rails -2-.
- Pull hand-cartridge gun evenly towards rear -3-, operating lever continuously to apply lubricating paste - G 060 751 A2- to guide rail.
- Turn hand-cartridge gun through 90°-4- and remove in vicinity of open glass panel -5-.
- Repeat lubrication procedure on opposite side of vehicle.

Step 2 - cleaning and lubricating slotted guide for glass panel:

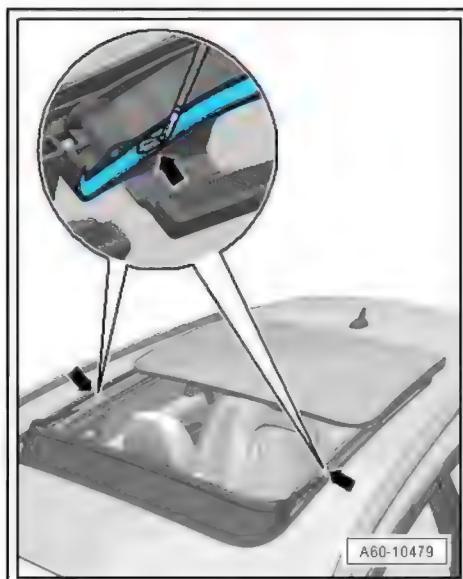
Glass panel opened completely.

- Remove grease and dirt from slotted guide for glass panel with a lint-free cloth.
- Open and close sunroof and open glass panel again completely. Opening and closing the sunroof distributes the lubricant along the guide rails. Any deposits of excess lubricant can be used to grease the slotted guide.
- Use a paintbrush to lubricate slotted guide for glass panel -arrow- with lubricating paste - G 060 751 A2- .
- Remove excess lubricant from slotted guide and guide rail with a lint-free cloth.
- Repeat procedure on opposite side of vehicle.



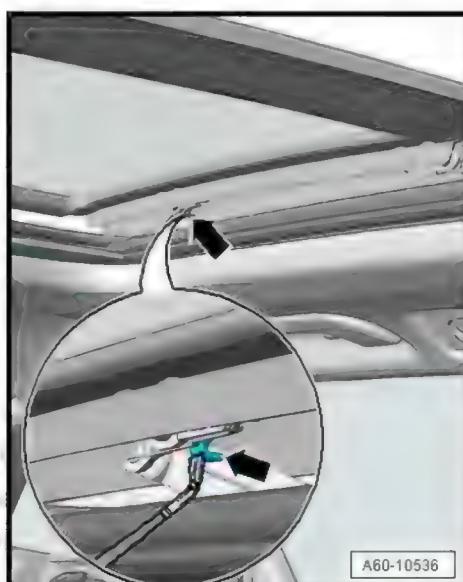
Step 3 - cleaning and lubricating locking hook for sunroof mechanism:

- Tilt open glass panel.
- Working from vehicle interior, remove grease and dirt from locking hook for sunroof mechanism with a lint-free cloth.



- Use a paintbrush to lubricate locking hook -arrow- with lubricating paste - G 060 751 A2- .
- Remove surplus lubricant from locking hook with a lint-free cloth.
- Repeat procedure on opposite side of vehicle.

- Open and close roof system completely and check again for surplus lubricant at all lubricating locations.



Step 4 - cleaning glass panel:

- Open glass panel completely.

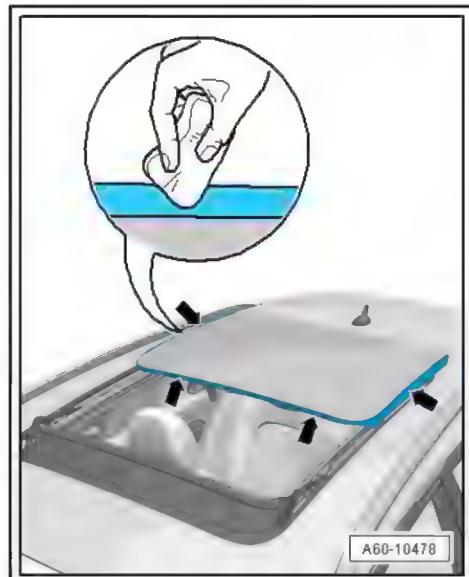
Do not use compressed air to clean the glass panel. Doing so may damage the glass panel.

- Remove grease and dirt from front and side edges of glass panel -arrows- using cleaning solution - D 009 401 04- and a lint-free cloth.

Step 5 - cleaning and lubricating roof frame seal:

Glass panel opened completely.

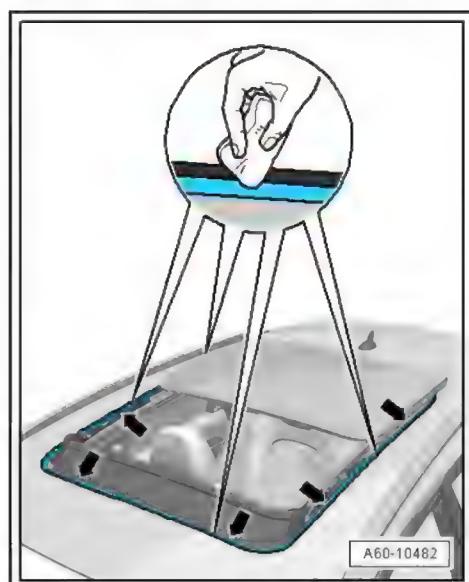
- Remove grease and dirt from seal for roof frame using cleaning solution - D 009 401 04- and a lint-free cloth.



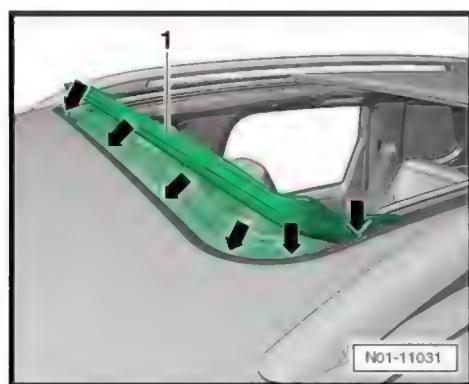
- Use a fine-pored sponge to lubricate roof frame seal -arrows- with lubricating paste - G 052 141 A2-. Make sure that no coarse residue remains visible.

Step 6 - cleaning wind deflector:

Glass panel opened completely.



- Clean screen and frame of wind deflector -1- using a sponge and soap solution.
- Use an industrial vacuum cleaner to remove any loose residue from wind deflector slot -arrows-.



3.39 Water drains - sliding panoramic sunroof: checking

Special tools and workshop equipment required

- ◆ Measuring cup
- ◆ Lint-free cloth

◆ Industrial vacuum cleaner

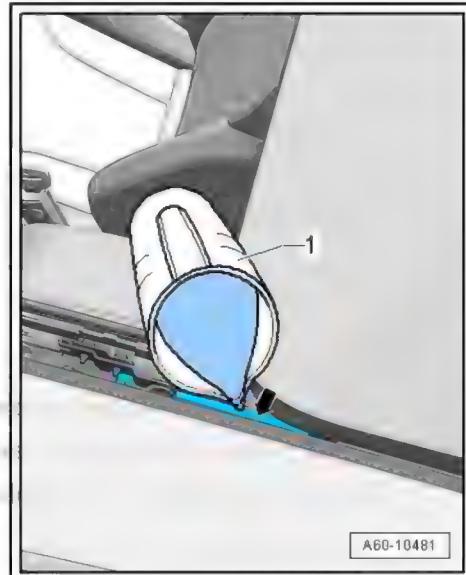
Procedure - checking for dirt in water drains:

Glass panel opened completely.

- Use industrial vacuum cleaner to remove visible dirt in area of guide rails or clean with a lint-free cloth.
- Use a measuring cup -1- to slowly pour 0.5 ltr. of water into guide rail on each side close to open glass panel -arrow-. Work carefully to ensure that the water does not overflow into the dry area of the vehicle. Make sure that water is distributed in both directions so that both water drains (front and rear) can be checked.
- At underside of vehicle, check that water flows out in the area of both the front and rear wheel housings.
- Repeat procedure on opposite side of vehicle.
- If no or only a little water flows out of the appropriate drainage points, clean water drains ⇒ General body repairs, exterior; Rep. gr. 60 ; Water drain hoses; Cleaning water drain hoses .

 Note

- ◆ Take care when pouring the water into the guide rail (both sides). If the water drain is blocked, the water can flow into the vehicle interior (headliner).
- ◆ The whole quantity of water must drain quickly (within a minute) from the water drains (front and rear, both sides) in the area of the wheel housings.



3.40 Rear spoiler hinges: lubricating

Special tools and workshop equipment required

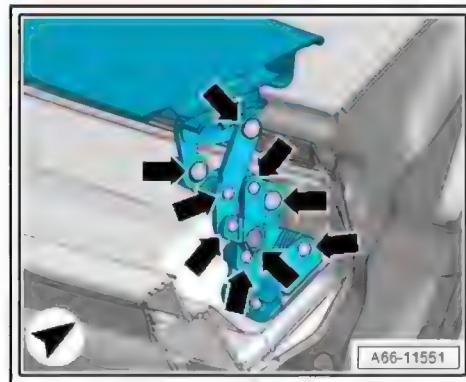
◆ Lubricant - G 052 172 A1-

Requirements:

- The vehicle must be at least at room temperature.

Procedure:

- Switch on ignition and extend rear spoiler.
- First clean all lubricating points with a lint-free cloth.
- Apply lubricant - G 052 172 A1- to points marked on all rear spoiler hinge joints -arrows-.
- Extend and retract rear spoiler at least five times so that lubricant is able to penetrate.
- Remove surplus lubricant with cloth.
- Repeat procedure on opposite side.
- Retract rear spoiler.



3.41 Door hinges with separate door arrester: cleaning and lubricating

Special tools and workshop equipment required

- ◆ Universal spray oil - G 000 115 A2- for door arresters and hinges

Requirements:

- The vehicle must be at least at room temperature.

Procedure:

- First clean all lubricating points with a lint-free cloth.
- Lubricate door hinge (top and bottom) at points marked -arrows- as well as separate door arrester -arrows- with universal oil spray - G 000 115 A2-.

Door hinge:



Door arrester:

- Move door several times so that the universal spray oil is able to penetrate.
- Use cloth to remove surplus lubricant from all door hinges.
- Repeat cleaning and lubricating procedure on all remaining doors of vehicle.



3.42 Front lid arrester hook: lubricating

Special tools and workshop equipment required

- ◆ Universal spray oil - G 000 115 A2-

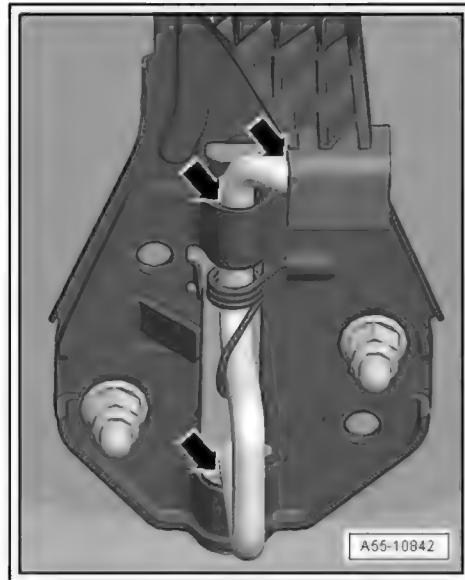
Requirements:

- The vehicle must be at least at room temperature.

Procedure:

- First clean all lubricating points with a lint-free cloth.

- Lubricate arrester hook with universal spray oil - G 000 115 A2- at points marked -arrows-.
- Operate moving parts several times so that the lubricant is able to penetrate.
- Remove surplus lubricant with cloth.



3.43 Windscreen/rear window washer system: checking spray pattern and adjusting if necessary

Checking windscreen spray pattern: triple washer jets
[⇒ page 70](#)

Checking windscreen spray pattern: hybrid jets [⇒ page 71](#)

Checking spray pattern on rear window [⇒ page 71](#)

Setting windscreen spray pattern, triple washer jets [⇒ page 71](#)

Setting windscreen spray pattern: hybrid jets [⇒ page 72](#)

Adjusting rear window washer jets [⇒ page 72](#)

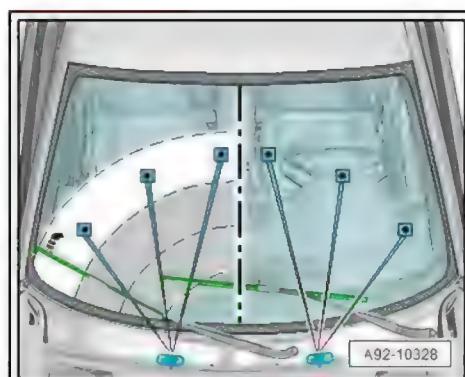
3.43.1 Checking windscreen spray pattern: triple washer jets

The spray pattern must meet the following specifications:

- Evenly distributed, symmetrical spray pattern
- Uniform, precise jets of water
- Jet unit (passenger's side): Water from all washer jets makes contact within upper third of wiper area -illustration-
- Jet unit (driver's side): Spray pattern symmetrically opposite that of jet unit on passenger's side

Procedure:

- Operate windscreen washer system and check spray pattern.
- If spray pattern is not as specified, adjust windscreen washer jets [⇒ page 71](#) .



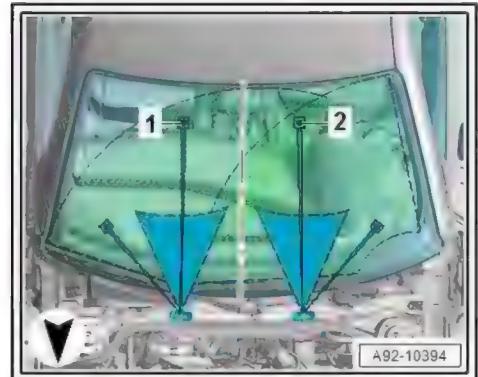
3.43.2 Checking windscreen spray pattern: hybrid jets

The spray pattern must meet the following specifications:

- Evenly distributed, symmetrical spray pattern
- Uniform, precise jets of water
- Jet unit (passenger's side): Upper concentrated jet should make contact near upper edge of wiper area -1-.
- Jet unit (driver's side): Upper concentrated jet should make contact -2- at same level as jet unit (passenger's side).

Procedure:

- Operate windscreen washer system and check spray pattern.
- If spray pattern is not as specified, adjust windscreen washer jets [⇒ page 72](#).



3.43.3 Checking spray pattern on rear window

The spray pattern must meet the following specifications:

- Water from both spray jets makes contact just above wiper blade
- Uniform, precise jets of water
- Water from inner spray jet makes contact within approx. first quarter of wiper blade length -illustration-
- Water from outer spray jet makes contact approx. at or just beyond centre of wiper blade length -illustration- (third quarter)

Procedure:

- Operate rear window washer system and check spray pattern.
- If spray pattern is not as specified, adjust rear window washer jets. [⇒ page 72](#)



3.43.4 Setting windscreen spray pattern: triple washer jets

Special tools and workshop equipment required

- ◆ Commercially available adjusting tool (e.g. adjusting tool -T10127-) or suitable needle

Procedure:

- Use adjusting tool to align washer jets as required according to specification.
- If the spray pattern still does not correspond to the specification, clean washer jets [⇒ Vehicle electrics; Rep. gr. 92 ; Windscreen wash/wipe system; Adjusting and cleaning washer jets](#).

3.43.5 Adjusting windscreen spray pattern: hybrid jets

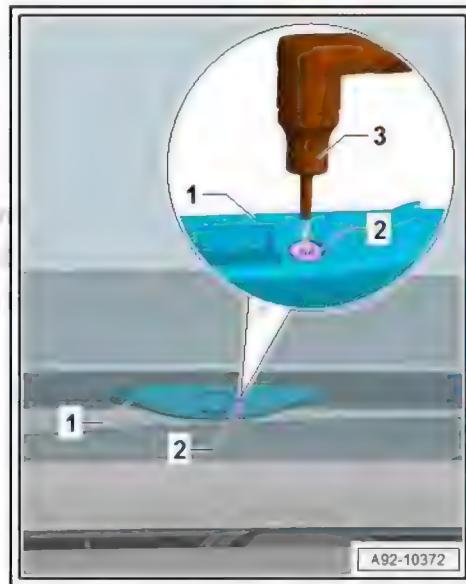
Procedure:

- Using adjuster screw -2-, set jet unit being adjusted according to specified pattern (use a tool with size 9 external Torx -3-).
- If the spray pattern still does not correspond to the specification, clean appropriate washer jets ⇒ Electrical system; Rep. gr. 92 ; Windscreen wiper system; Adjusting washer jets .



Note

Only the height of the jets of water of each jet unit can be adjusted, and all jets must be adjusted together via an adjuster screw. The jets cannot be adjusted individually or laterally.



3.43.6 Adjusting rear window washer jets

Special tools and workshop equipment required

- ◆ Commercially available adjusting tool (e.g. adjusting tool - T10127-) or suitable needle

Procedure:

- Use adjusting tool to align washer jets as required according to specification.
- If the spray pattern still does not correspond to the specification, clean washer jets ⇒ Electrical system; Rep. gr. 92 ; Rear window wiper system; Adjusting washer jets .

3.44 Wiper blades: checking for damage

Wiper blades: checking for damage (version 1) ⇒ [page 72](#)

Wiper blades: checking for damage (version 2) ⇒ [page 73](#)

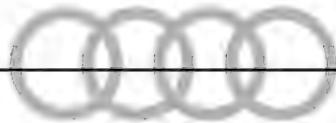
3.44.1 Wiper blades: checking for damage (version 1)

Step 1 - service position:

- Switch off ignition.
- Press windscreen wiper lever downwards briefly.

Step 2 - checking:

- Lift windscreen wipers and check each wiper blade for tears, cuts, abraded areas or other damage.
- Repeat check on rear window.
- If you find damage: Renew relevant wiper blade. Windscreen wiper system ⇒ Electrical system; Rep. gr. 92 ; Windscreen wiper system; Removing and installing wiper blade ; rear window wiper system ⇒ Electrical system; Rep. gr. 92 ; Rear window wiper system; Removing and installing wiper blade



Note

*There are other methods of setting the service position
⇒ page 73.*

3.44.2 Wiper blades: checking for damage (version 2)

Step 1 - service position:

- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«/»Car systems«, navigate through following menu structure:
 - ◆ Servicing & checks
 - ◆ Wiper change pos.
- Use MMI rotary pushbutton to activate service position for windscreen wipers.

Step 2 - checking:

- Lift windscreen wipers and check each wiper blade for tears, cuts, abraded areas or other damage.
- Repeat check on rear window.
- If you find damage: Renew relevant wiper blade. Windscreen wiper system ⇒ Electrical system; Rep. gr. 92 ; Windscreen wiper system; Removing and installing wiper blade ; rear window wiper system ⇒ Electrical system; Rep. gr. 92 ; Rear window wiper system; Removing and installing wiper blade



Note

*There are other methods of setting the service position
⇒ page 72.*

3.45 Headlight washer system: checking operation

Not all vehicles are equipped with a headlight washer system (depending on equipment version).

Procedure:

- Operate headlight washer system and check function.
- If water jet does not contact headlight: Renew relevant washer jets ⇒ Electrical system; Rep. gr. 92 ; Headlight washer system; Removing and installing washer jets .



Note

The headlight washer jets are set by the manufacturer and therefore cannot be adjusted.

3.46 Headlights: checking for correct adjustment

Special tools and workshop equipment required

- ◆ Headlight adjustment unit - VAS 5209B-



- ◆ Or: headlight adjustment unit - VAS 621 001-



Note

Other headlight adjustment units (e.g. VAS 5208A, VAS 621 005, VAS 5046A and VAS 5047A) can also be used to check the headlight adjustment (except for matrix LED headlights). Checking matrix LED headlights requires adjustment unit VAS 5209B or VAS 621 001.

Performed as part of an inspection, this check is merely an abbreviated form of the headlight adjustment check required, for example, after a repair, and does not take the place of a full headlight adjustment check.

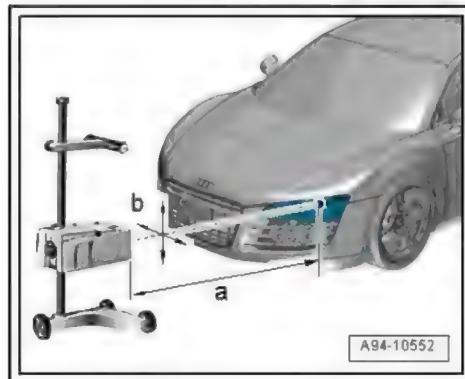
Do not adjust the vehicle load or the tyre pressures for this procedure.

Do not adjust the headlights to their basic setting using the vehicle diagnostic tester.

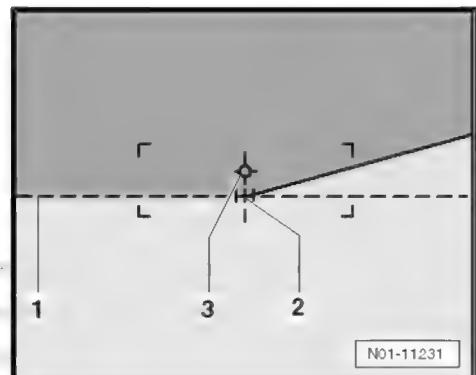
Checking and adjusting the headlights according to the instructions in the Workshop Manual is a repair measure and must be charged separately.

Procedure:

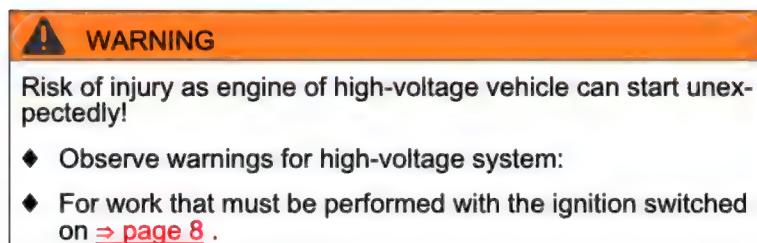
- For vehicles with manually adjustable headlight range control:
Use manual adjuster to set to basic setting.
- Activate dipped headlights.
- Align headlight adjustment unit parallel to vehicle and position it centrally in front of headlight at a distance of 30 to 70 cm -distance a-; deviation from centre of light emission surface must not exceed 3 cm -distance b-.



- Adjust dip setting of headlight adjustment unit so that beam of headlight falls on test screen according to following parameter: Horizontal light-dark border should coincide with setting line -1-.
- Read off dip setting of headlight adjuster.
- Repeat procedure on opposite side.
- Compare dip setting on left and right sides.
- If they deviate 2.0% or more from one another: Check and adjust headlight setting according to procedure specified in Workshop Manual ➤ Electrical system; Rep. gr. 94 ; Headlights; Adjusting headlights .



3.47 Headlights and reversing lights, side lights, number plate lights, turn signals, hazard warning lights: checking operation



Check the lights/signals listed below from the outside to ensure they function properly.

Procedure:

- Activate side lights and check that the following exterior lights function properly:
 - ◆ Side lights (front)
 - ◆ Side lights (rear)
 - ◆ If applicable: additional tail light under open rear lid
- Switch on ignition.
- Check operation of daytime running lights (front).
- Operate right turn signal, left turn signal and hazard warning lights, and check that corresponding turn signal lamps at front, rear and side function properly.
- Activate dipped headlights and check that the following exterior lights function properly:
 - ◆ Dipped headlights
 - ◆ Tail lights
 - ◆ Number plate lights
- Use appropriate switch to activate fog lights and check that they function properly.
- Check that main beam headlights function properly.
- Operate brakes and check function of all brake lights.
- Engage reverse gear and check that all reversing lights function properly. This model is fitted with two reversing lights.

- Use appropriate switch to activate rear fog lights and check that they function properly. This model is fitted with two rear fog lights.
- Renew any defective bulbs.



Note

It is possible to deactivate the daytime running lights intentionally via the appropriate MMI setup menu.

3.48 Luggage compartment lighting: checking operation

A6 Avant [⇒ page 76](#)

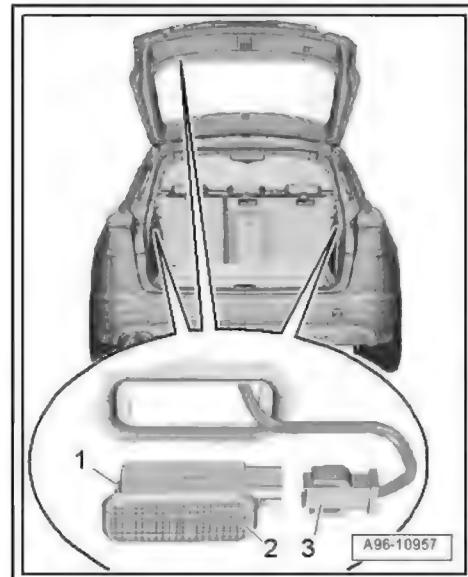
A6 Saloon [⇒ page 76](#)

A7 [⇒ page 77](#)

3.48.1 A6 Avant

Procedure:

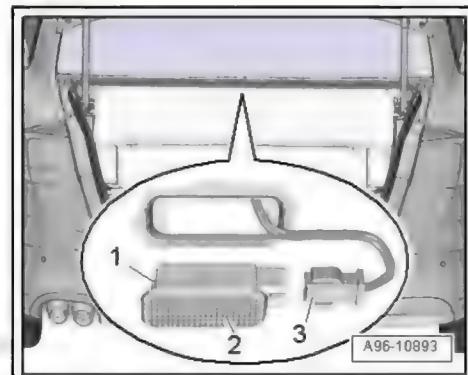
- Check that luggage compartment lights shown -arrows- function properly.



3.48.2 A6 Saloon

Procedure:

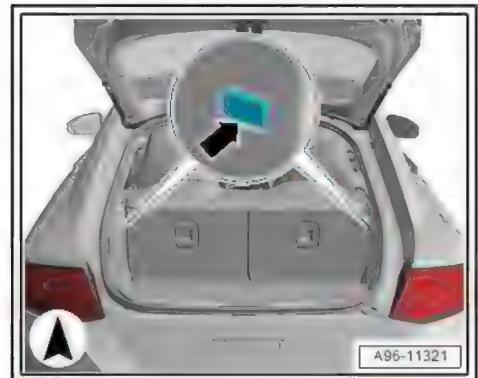
- Check that luggage compartment light shown -arrows- functions properly.



3.48.3 A7

Procedure:

- Check that luggage compartment lights shown -arrows- function properly.



A96-11321

3.49 Luggage compartment: removing protective film and felt pieces

Procedure:

- Remove protective film and felt pieces carefully and completely from luggage compartment.

3.50 Glove box light, interior lighting and reading light: checking operation

⚠ WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#) .

Procedure:

- Open glove box and check that glove box light functions properly.
- Use the appropriate switches to activate the following interior lights and check that the lights function properly:
 - ◆ Interior lights in headliner at front
 - ◆ Interior lights in headliner at rear



Checking the background lighting is NOT part of the inspection.

3.51 Horn: checking operation

⚠ WARNING

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#) .

Procedure:

- Switch on ignition.
- Operate horn and check proper function of treble horn and bass horn.



Note

Perform this check outdoors, e.g. when driving the vehicle to the workshop or during a road test.

3.52 Passenger airbag: checking key switch on/off and setting to "on"



WARNING

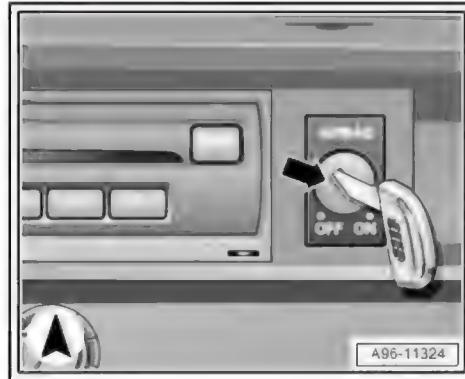
Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on [⇒ page 8](#).

Switch for "Airbag ON/OFF" is located in glove box -arrow-.

Procedure:

- Turn switch to "AIRBAG OFF" position.
- Switch ignition on and wait for vehicle to complete initial system check.
- Check that "PASSENGER AIRBAG OFF" display lights up in instrument cluster.
- Switch off ignition.
- Turn switch to "AIRBAG ON" position.
- Switch ignition on and wait for vehicle to complete initial system check.
- Check that "PASSENGER AIRBAG OFF" disappears.
- Switch off ignition.



Note

The amount of time needed for the vehicle system check varies depending on the model and equipment.

3.53 Owner's literature: checking that all documents are present

Procedure:

- Check that all parts of owner's literature are present, and prepare them for handover to customer.

3.54 Service wallet: affixing vehicle data sticker

The vehicle data sticker can be found in the supplied pack.

Procedure:

- Remove vehicle data sticker from supplied pack.
- Affix vehicle data sticker in service wallet under "Warranty entitlement record".



Note

Does not apply to vehicles for USA and China.

3.55 Service Schedule: entering Delivery Inspection

The field for documenting the Delivery Inspection can be found on page 2 of the Service Schedule.

Procedure:

- Apply stamp of Audi Workshop.
- Enter date of work carried out.
- Mark relevant field(s).



Note

Only for markets not using the Digital Service Schedule.

3.56 Seat belts: checking fixing device for latch plate, and checking locking action of automatic belt retractor

Procedure:

For all seat belts installed:

- Check that retaining rivets/clips/loop sewn to belt for fixing latch plate in place are present.
- Check locking action of automatic belt retractors when belt is unrolled abruptly.



Note

- ◆ *The fixing devices on the seat belts in the vehicle may vary depending on the model (e.g. loop sewn on belt for front belts and retaining rivets for rear belts). There may also be two rivets per belt (centre rear). If a retaining rivet/loop is missing, this can be detected by damage on the belt.*
- ◆ *If the seat belt is securing an object (e.g. child seat), do not release the seat belt. Only check the locking action when the belt is buckled; it is not necessary to check the retaining rivet/clip in this case.*

3.57 Vehicle interior: removing protective covers for seats and carpet

Procedure:

- Remove protective covers for seats and carpet carefully and completely from vehicle interior.

3.58 Vehicle interior: checking that it is clean and cleaning if necessary

Procedure:

Check that the following items are clean (clean them if necessary):

- ◆ Front seats
- ◆ Rear seat bench
- ◆ Interior trim
- ◆ Carpets
- ◆ Floor mats
- ◆ Windows/windscreen

3.59 Vehicle interior: removing any objects other than those protecting interior surfaces

Procedure:

- Remove any objects from vehicle other than those which are protecting interior surfaces.

3.60 Vehicle interior and exterior: checking for and documenting any damage

Procedure:

- Check interior of vehicle for damage and document any damage found.
- Check exterior of vehicle for damage and document any damage found.

3.61 Instrument cluster: checking warning lamps

Reading out the event memory is a repair measure and should be charged separately.

Procedure:

- Start engine and wait for vehicle to complete initial system check.
- Check whether warning lamps light up in instrument cluster.
- Switch off engine.
- If relevant warning lamps light up: Read out event memory [⇒ page 25](#).



Note



The amount of time needed for the vehicle system check varies depending on the model and equipment.

3.62 Warning triangle: checking availability

Procedure:

- Check that warning triangle(s) is/are present.

3.63 First-aid kit: checking and recording expiry date

The first-aid kit is located in the centre armrest of the rear seat bench.

Procedure:

- Take out first-aid kit and check expiry date printed on kit.
- Record expiry date in Maintenance table.
- If expiry date has passed: Renew first-aid kit.

3.64 Vehicle keys: checking operation and recording number of keys given to customer

Procedure:

- Open key ring to check each key individually.
- Start vehicle with each key individually.
- Record number of keys which have been matched and handed over in Maintenance table.
- If a vehicle key has not been matched: Re-match all keys to vehicle using Guided Function of vehicle diagnostic tester via online tool GeKo.
- If there is reason to suspect improper use (e.g. missing key): See current notices from AUDI AG under "Technical information ➤ Anti-theft protection" on ServiceNet.



Note

- ◆ *Only the key being checked may be inside the vehicle. Place all other keys out of transmission range.*
- ◆ *If the key has not been matched, the engine will turn off after a few seconds. In addition, the warning lamp for the immobiliser or the display "SAFE" will appear in the instrument cluster, depending on the vehicle equipment.*

3.65 Vehicle key: removing from ignition lock

Only applies to vehicles with ignition lock.

Procedure:

- Remove vehicle key from ignition lock.

3.66 Vehicle key(s), wheel covers and owner's literature: checking availability and recording number present

Procedure:

- Check whether there are keys for the vehicle and record number of keys in maintenance table.
- Check whether there are wheel covers for the vehicle and record number of wheel covers in maintenance table.
- Check whether owner's literature is in place and record number of copies in maintenance table.
- Wait until shortly before vehicle delivery to renew any missing components.

3.67 Sun visors: checking that they are folded up and folding up if necessary

Procedure:

- Check that sun visors are folded up, and fold them up if necessary.

3.68 Luggage compartment cover and sun blind: checking that they are rolled up and rolling up if necessary

Procedure:

- If a luggage compartment cover is fitted, check that it is rolled up (roll it up if necessary).
- Check that sun blinds are folded up (fold them up if necessary).

3.69 Engine oil: draining



Note

- ◆ *Oil should always be changed when engine is warm.*
- ◆ *Always observe the relevant environmental regulations for disposal.*
- ◆ *Keep components clean.*

8-cyl. petrol engine 4.0 TFSI [⇒ page 82](#)

4-cyl. diesel engine 2.0 TDI [⇒ page 83](#)

3.69.1 8-cyl. petrol engine 4.0 TFSI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	20
Oil drain plug on oil filter cover	4

Requirements:

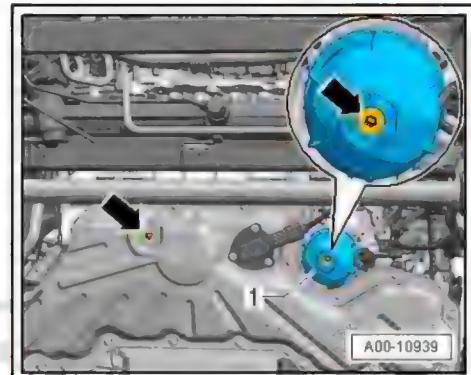
- Engine oil temperature at least 90 °C

Removal steps:

- Remove noise insulation [⇒ page 15](#) .

Procedure:

- Place oil drip tray under engine sump.
- Unscrew oil drain plugs -arrows- of sump and in oil filter cover -1-.
- Drain engine oil from oil filter housing and sump.
- Renew seals of both oil drain plugs.
- Re-install both oil drain plugs and tighten to specified torque (see table of tightening torques for installation [⇒ page 82](#)).



3.69.2 4-cyl. diesel engine 2.0 TDI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	30

Removal steps:

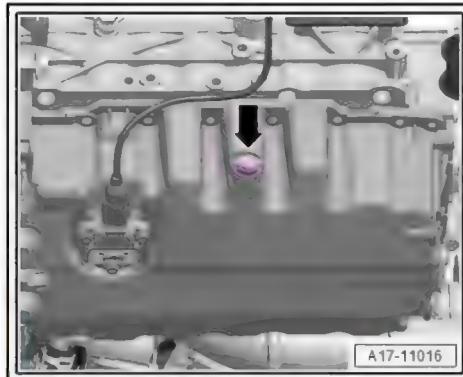
- Remove noise insulation [⇒ page 15](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation [⇒ page 83](#)).

Continue installation in reverse sequence.



3.70 Engine oil: extracting

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



Procedure:

- Pull oil dipstick/sealing plug out of guide tube.
- Insert extraction probe of oil extraction unit into guide tube. Use flexible extraction probe with largest possible diameter and insert without using any significant force. Otherwise the tip can become diverted on the bottom of the sump and a large amount of used oil will remain in the engine.
- Extract engine oil completely. Observe operating instructions for extraction unit.
- Finally, install oil dipstick/sealing plug.

Note

- ◆ *Oil should always be changed when engine is warm.*
- ◆ *Always observe the relevant environmental regulations for disposal.*
- ◆ *Keep components clean.*

3.71 Engine oil: renewing oil filter

4-cyl. petrol engine 1.8 TFSI/2.0 TFSI/2.0 TFSI hybrid (version 1)
⇒ [page 85](#)

4-cyl. petrol engine 2.0 TFSI (version 2) ⇒ [page 86](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI ⇒ [page 87](#)

6-cyl. petrol engine 3.0 TFSI ⇒ [page 88](#)

8-cyl. petrol engine 4.0 TFSI ⇒ [page 89](#)

4-cyl. diesel engine 2.0 TDI (version 1) ⇒ [page 90](#)

4-cyl. diesel engine 2.0 TDI (version 2) ⇒ [page 91](#)

6-cyl. diesel engine 3.0 TDI ⇒ [page 92](#)

3.71.1 4-cyl. petrol engine 1.8 TFSI/2.0 TFSI/ 2.0 TFSI hybrid (version 1)

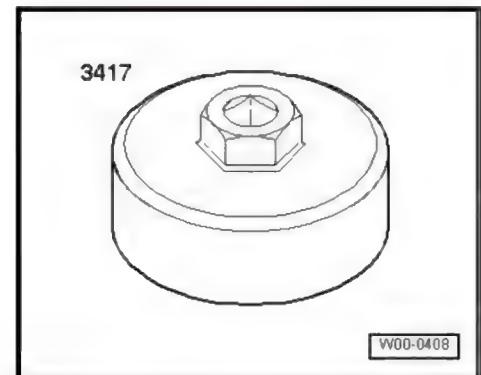
DANGER

Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ For work in the vicinity of high-voltage components
⇒ [page 6](#).

Special tools and workshop equipment required

- ◆ Oil filter tool - 3417-



- ◆ Hazet strap wrench - 2171-1-
- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil filter cartridge	22

Removal steps:

- Remove engine cover panel ⇒ [page 11](#) .

Procedure:

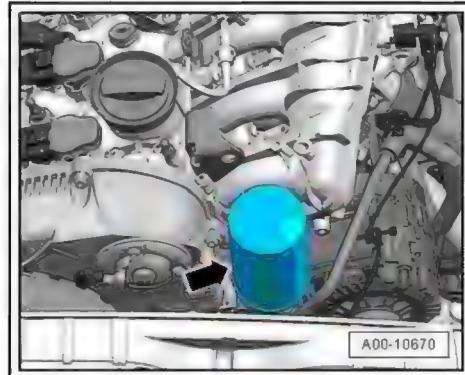
- Use Hazet strap wrench - 2171-1- or oil filter tool - 3417- to slacken oil filter cartridge -arrow- and then remove it.
- Clean sealing surface for oil filter at engine.
- Lubricate rubber seal on new oil filter cartridge with engine oil.
- Fit new oil filter cartridge on engine and tighten to specified torque (see table of tightening torques for installation
⇒ [page 85](#)).

Continue installation in reverse sequence.



Note

There is an additional oil filter version for the 2.0 TFSI engine.



3.71.2 4-cyl. petrol engine 2.0 TFSI (version 2)

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

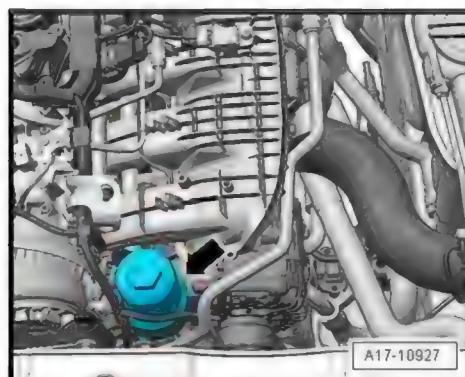
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel.

Procedure:

- Loosen sealing cap -arrow- of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Fully unscrew sealing cap -arrow- and pull it off straight upwards. Make sure that no engine oil drips onto engine.



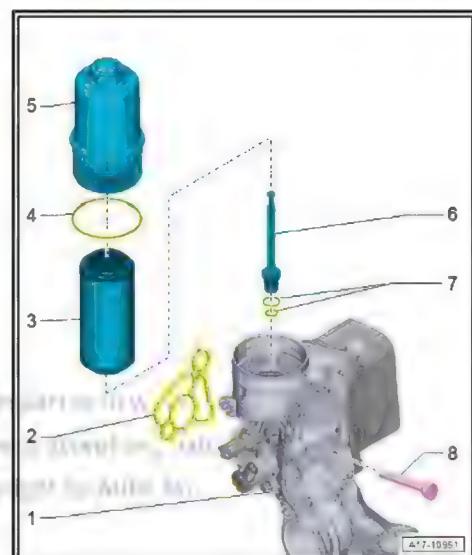
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Information in this document is not binding unless confirmed in writing.

- Pull oil filter element -3- and O-ring -4- out of sealing cap -5-.
- Pull oil drain connection -6- out fully and check for damage.
- Clean sealing surfaces of sealing cap.
- Lightly lubricate new O-ring -4- with engine oil and insert O-ring.
- Fit new oil filter element -3- in sealing cap.
- Fit oil drain connection in new oil filter element.
- Screw sealing cap into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation [⇒ page 86](#)).

Continue installation in reverse sequence.



There is an additional oil filter version for the 2.0 TFSI engine.



3.71.3 6-cyl. petrol engine 2.5 FSI/2.8 FSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

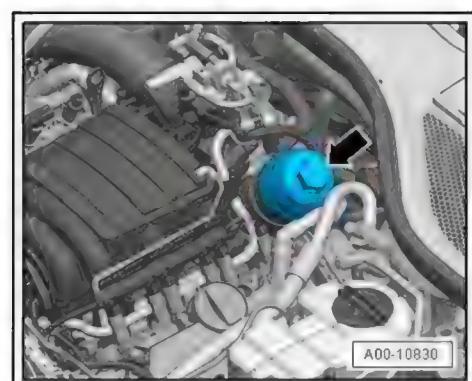
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

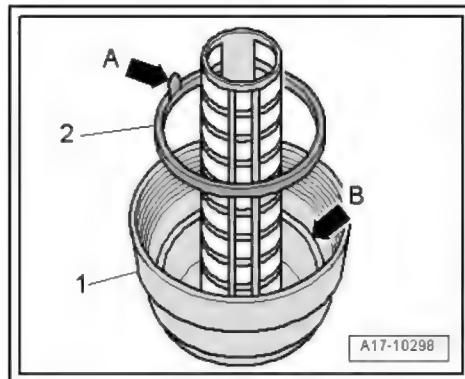
- Remove engine cover panel [⇒ page 11](#) .

Procedure:

- Loosen sealing cap -arrow- of oil filter using socket (36 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap -arrow- of oil filter. Make sure that no engine oil drips onto engine.

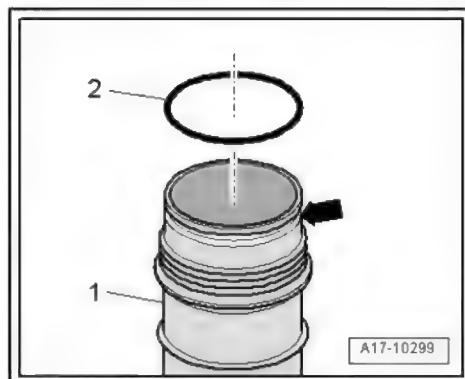


- Pull oil filter element and seal -2- out of sealing cap -1-.
- Clean sealing surface -B- of sealing cap -1-.
- Lightly lubricate new seal -2- with engine oil and insert into sealing cap. Note position of service tab -A- on seal. Flat side of seal profile must face outwards.



- Remove O-ring -2- on oil filter housing -1-.
- Lightly lubricate new O-ring -2- with engine oil and insert into groove -arrow-.
- Fit new oil filter element in sealing cap.
- Screw sealing cap into oil filter housing and tighten to specified torque using socket (36 mm) (see table of tightening torques for installation [⇒ page 87](#)).

Continue installation in reverse sequence.



3.71.4 6-cyl. petrol engine 3.0 TFSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

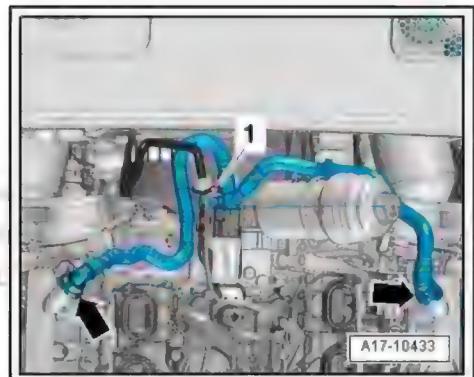
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

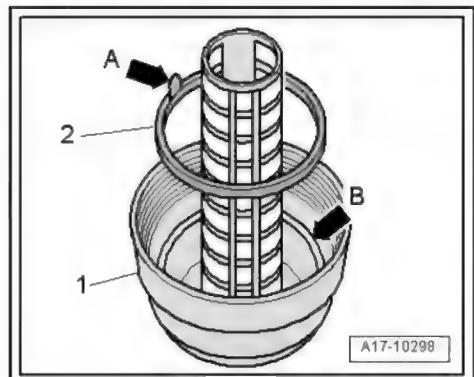
- Remove engine cover panel [⇒ page 11](#) .

Procedure:

- Loosen sealing cap of oil filter using socket (36 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap -arrow- of oil filter. Make sure that no engine oil drips onto engine.

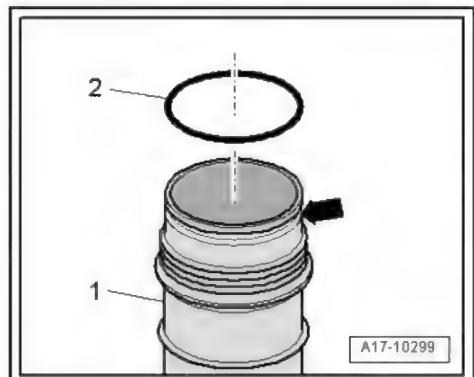


- Pull oil filter element and seal -2- out of sealing cap -1-.
- Clean sealing surface -B- of sealing cap -1-.
- Lightly lubricate new seal -2- with engine oil and insert into sealing cap. Note position of service tab -A- on seal. Flat side of seal profile must face outwards.



- Remove O-ring -2- on oil filter housing -1-.
- Lightly lubricate new O-ring -2- with engine oil and insert into groove -arrow-.
- Fit new oil filter element in sealing cap.
- Screw sealing cap into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation [→ page 88](#)).

Continue installation in reverse sequence.



3.71.5 8-cyl. petrol engine 4.0 TFSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Sealing cap on oil filter	25

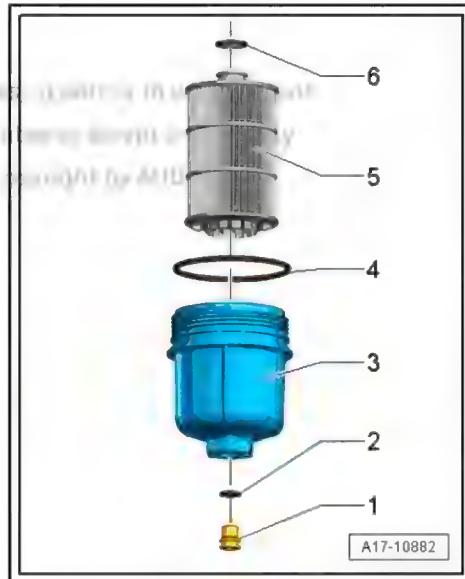
Requirements:

- Engine oil drained.

Procedure:

- Loosen sealing cap using socket (32 mm) and remove it.
- Pull oil filter element -5- and O-ring -4- out of sealing cap -3-.
- Clean sealing surfaces of sealing cap.
- Lightly lubricate new O-rings -4- and -6- with engine oil and insert into grooves.
- Fit new oil filter element -5- in sealing cap -3-.
- Fit sealing cap -3- on engine and tighten to appropriate torque using socket (24 mm) (see table of tightening torques for installation [page 89](#)).

Continue installation in reverse sequence.



3.71.6 4-cyl. diesel engine 2.0 TDI (version 1)

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

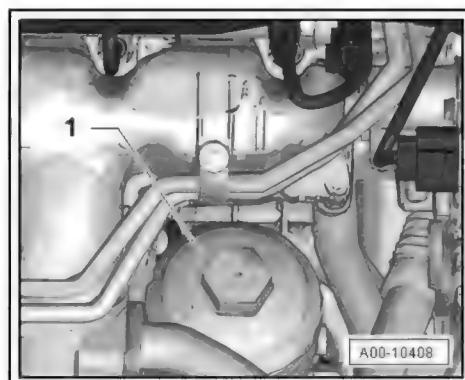
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel [page 11](#) .

Procedure:

- Loosen sealing cap -1- of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



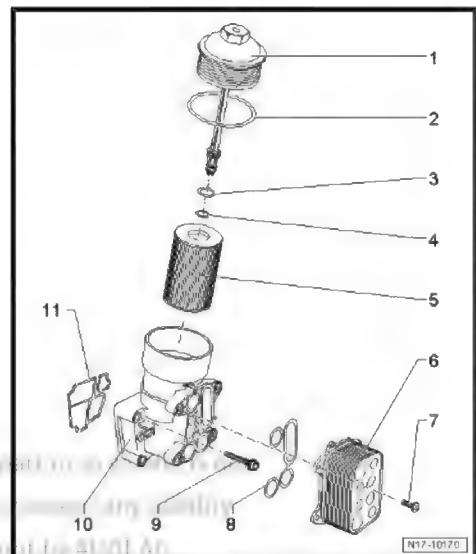
- Pull oil filter element -5- and O-ring -2- out of sealing cap -1-.
- Clean sealing surfaces of sealing cap.
- Lightly lubricate new O-rings -2-, -3- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -5- in sealing cap.
- Screw sealing cap into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation → [page 90](#)).

Continue installation in reverse sequence.



Note

There is more than one version of the oil filter for the 4-cylinder 2.0 TDI diesel engine → [page 91](#).



3.71.7 4-cyl. diesel engine 2.0 TDI (version 2)

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel → [page 11](#) .

Procedure:

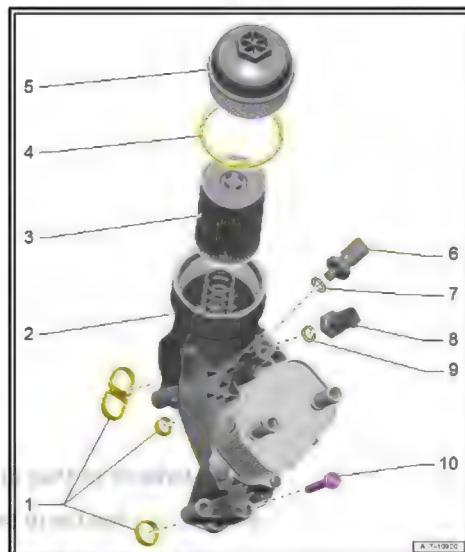
- Loosen sealing cap of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.

- Pull oil filter element -3- and O-ring -4- out of sealing cap -5-.
- Clean sealing surfaces of sealing cap -5-.
- Lightly lubricate new O-ring -4- with engine oil and insert O-ring.
- Fit new oil filter element -3- in sealing cap.
- Screw sealing cap -5- into oil filter housing -2- and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation [⇒ page 91](#)).

Continue installation in reverse sequence.



There is more than one version of the oil filter for the 4-cylinder 2.0 TDI diesel engine [⇒ page 90](#).



3.71.8 6-cyl. diesel engine 3.0 TDI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

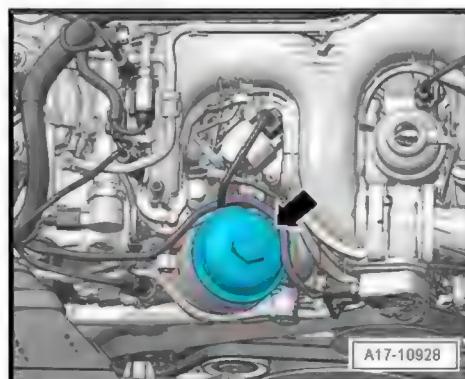
Component/fastener	[Nm]
Sealing cap	35

Removal steps:

- Remove engine cover panel [⇒ page 11](#) .

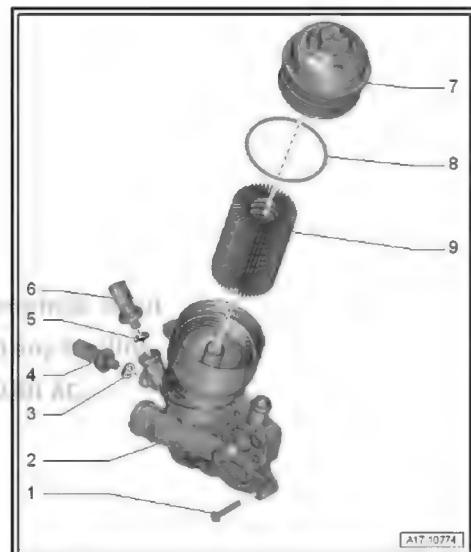
Procedure:

- Loosen sealing cap -arrow- using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -9- and O-ring -8- out of sealing cap -7-.
- Clean sealing surfaces of sealing cap -7-.
- Lightly lubricate new O-ring -8- with engine oil and insert O-ring.
- Fit new oil filter element -9- in sealing cap.
- Screw sealing cap -7- into oil filter housing -2- and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation [⇒ page 92](#)).

Continue installation in reverse sequence.



3.72 Engine oil: filling up

⚠ CAUTION

Risk of engine damage if the engine is revved too soon after changing the oil!

- ◆ The engine must only run at idling speed as long as the oil pressure warning lamp in the instrument cluster is on.
- ◆ Increase the engine speed only after the warning lamp has gone out.

Special tools and workshop equipment required

- ◆ Oil filler funnel - VAS 6842-



Refer to ELSA maintenance table for engine-specific oil capacities and oil grades.

Procedure:

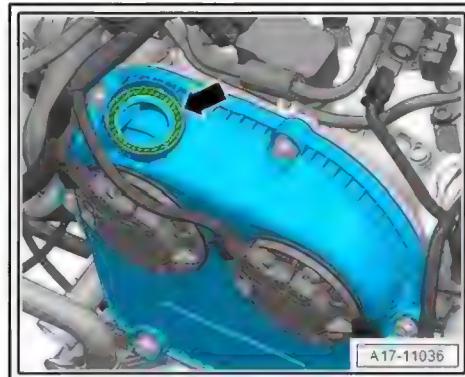
- Fill up engine oil using oil filler funnel - VAS 6842- .
- Then check oil level and adjust if necessary [⇒ page 94](#) .

- For all 4-cylinder petrol engines 1.8/2.0 TFSI with oil filler neck on timing chain cover: Clean sealing surface -arrow- on inside of oil filler neck with a lint-free cloth before screwing on filler cap.



Note

The quantity of oil specified in the maintenance table refers to the oil change; it is not identical to the quantity required for the initial filling.



3.73 Engine oil: checking oil level and correcting if necessary



CAUTION

Risk of damage to catalytic converter if engine oil level is too high!

- ♦ Drain engine oil until level meets specification.

Requirements for all engines except V6 diesel engines and V8 petrol engines:

- Engine oil temperature at least 60 °C
- Wait a few minutes after switching off the engine to allow the oil to flow back into the sump.
- Vehicle must be level (horizontal).

Requirements for V6 diesel engines:

- The engine must be at operating temperature (90 °C oil temperature).
- Wait approx. two minutes after switching off the engine to allow the oil to drain back into the sump.
- Vehicle must be level (horizontal).

Requirements for V8 petrol engines:

- The engine must be at operating temperature (90 °C oil temperature).
- Allow engine to run at idling speed for approx. one minute.
- Switch off engine and wait approx. five minutes (to allow oil to flow back slowly).
- Check engine oil level within one minute.
- Vehicle must be level (horizontal).

Checking oil level with dipstick [⇒ page 94](#)

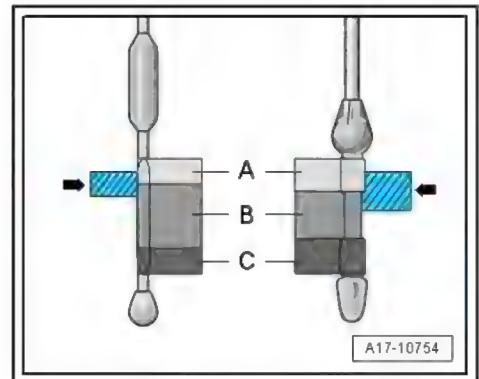
Checking oil level on MMI [⇒ page 95](#)

3.73.1 Checking oil level with dipstick

Procedure:

- Pull out dipstick and wipe it off with a clean cloth.
- Re-insert dipstick into guide tube as far as it will go.

- Pull oil dipstick out again and read off oil level on marked area.
- Evaluate oil level and determine any necessary measures accordingly:



Fluid level:

Evaluation/measure:

Marked area -arrow-

Optimum oil level.

Area A

Oil must not be topped up.

Area B

Oil can be topped up.

Area C

Oil must be topped up.



Note

Some engines are not fitted with an oil dipstick; if this is the case, use the oil level display in the MMI system [page 95](#).

3.73.2 Checking oil level on MMI

Procedure:

- If necessary, close bonnet.
- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Car systems«, navigate through following menu structure:
 - ◆ Servicing & checks
 - ◆ Fluid level
- Read off and evaluate oil level on display.
- If necessary, correct oil level:



Fluid level:

Evaluation/measure:

At or just under "max"

Optimum oil level.

Significantly under "max"

Fill up engine oil to optimum level (close bonnet to refresh oil level display).

i Note

- ◆ The oil level display on the MMI is not refreshed when the bonnet is open.
- ◆ A warning lamp in the driver information system indicates that the level is too low.

3.74 Poly V-belts for ancillaries: checking

⚠ CAUTION

Risk of engine damage if camshaft drive slips.

- ◆ Only turn crankshaft in direction of engine rotation.

This maintenance item only applies to certain countries: Note specification in Maintenance table.

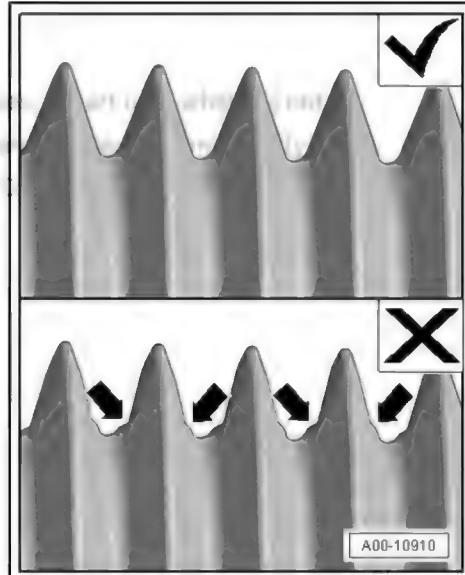
Removal steps:

- Remove engine cover panel [⇒ page 11](#).
- Remove poly V-belt ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

Procedure:

- Check poly V-belt (removed from vehicle) along entire length, as well as pulleys on engine that are within view. Look for the following types of damage:
 - ◆ Cracks or tears in belt profile and on reverse side (cracks, core fractures, cross-sectional fractures)
 - ◆ Layer separation (top layer, cord strands)
 - ◆ Fraying of cord strands
 - ◆ Foreign objects in belt profile and reverse side
 - ◆ Excessive traces of oil and grease on rollers and pulleys
 - ◆ Flank wear on pulleys (material wear, frayed flanks, surface cracks); see -illustration-
- Applies to vehicles with power steering pump: Check alternator freewheel.
- If damage is found: Renew damaged component.

Install in reverse sequence.



i Note

The example given here shows possible damage to a pulley. The appearance of other types of material wear on the load-bearing flanks of the ribbing can be different.

3.75 Spark plugs: renewing

4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid [⇒ page 97](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI/3.0 TFSI [⇒ page 99](#)

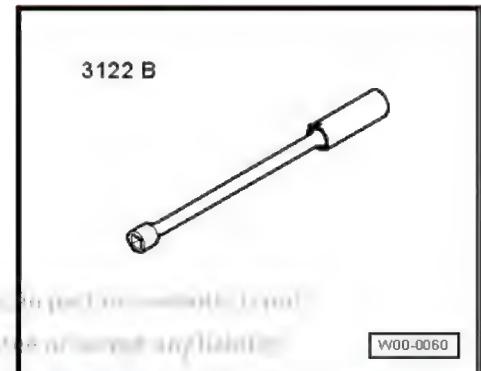
8-cyl. petrol engine 4.0 TFSI [⇒ page 102](#)

Lubricating ignition coils [⇒ page 106](#)

3.75.1 4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



- ◆ Puller - T40039-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

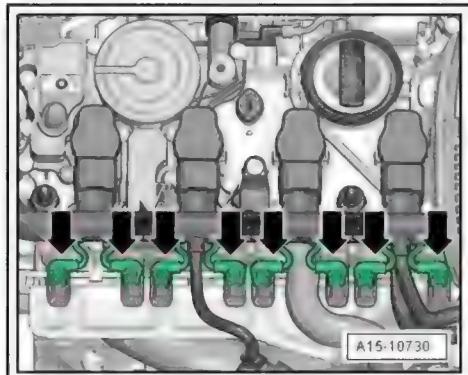
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

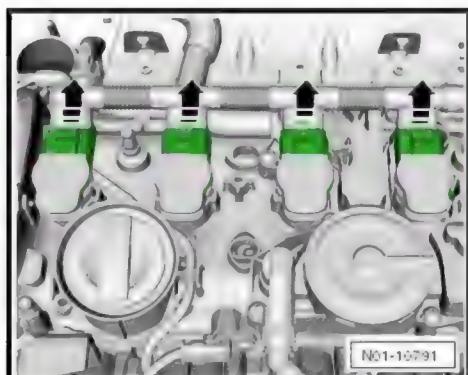
- Remove engine cover panel [⇒ page 11](#) .

Step 1 - removing spark plugs:

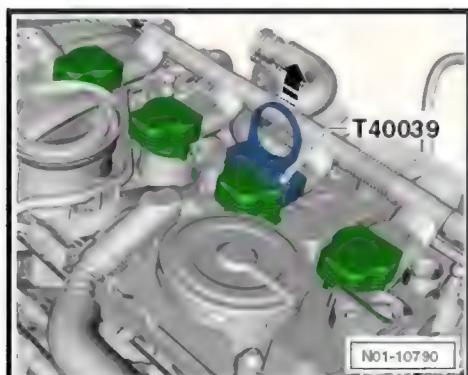
- Release and unplug electrical connectors -arrows- from actuators for camshaft adjustment.
- Unscrew bolts for connector rail.



- Release connectors -arrows- and pull all connectors simultaneously off ignition coils.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.



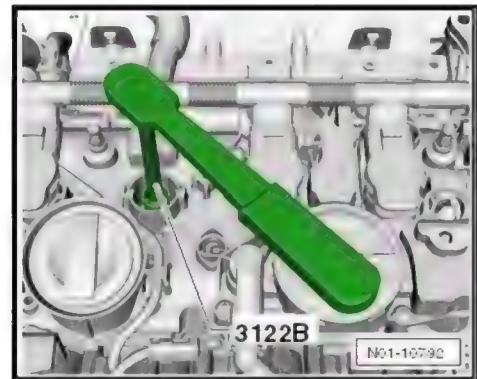
Руководство по эксплуатации. Составлено в соответствии с инструкциями по технике безопасности, а также
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- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 2 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (table [⇒ page 97](#)).
- Lubricate ignition coils [⇒ page 106](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Plug electrical connectors into actuators for camshaft adjustment so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation [⇒ page 97](#)).

Continue installation in reverse sequence.



3.75.2 6-cyl. petrol engine 2.5 FSI/2.8 FSI/3.0 TFSI

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



- ◆ Puller - T40039-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

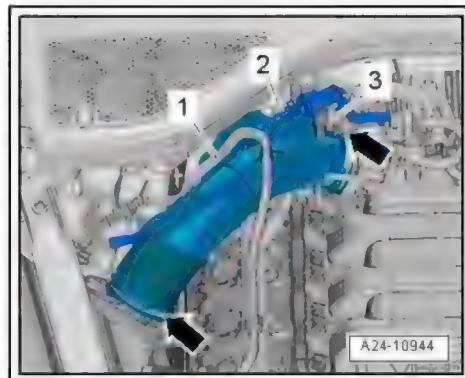
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

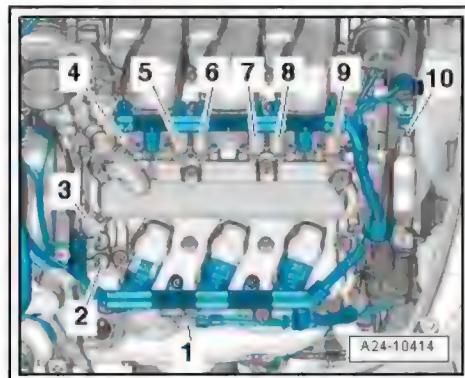
- Remove engine cover panel [page 11](#).

Step 1 - removing spark plugs, cylinder bank (right-side):

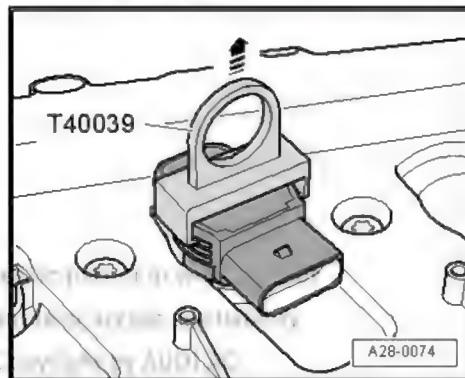
- Move fuel line -1- and hose -2- leading to activated charcoal filter clear at air pipe.
- Detach vacuum hose -3- from connection on air pipe.
- Loosen hose clips -arrows- and detach air pipe.
- Remove air cleaner housing ⇒ Rep. gr. 24 ; Removing and installing air cleaner housing .



- Release and unplug electrical connectors -2-, -3-, -4-, -5-, -6-, -7-, -8- and -9- from actuators for camshaft adjustment.
- Unplug electrical connectors -1- at Hall sender 3 - G300- .
- Unscrew bolts for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



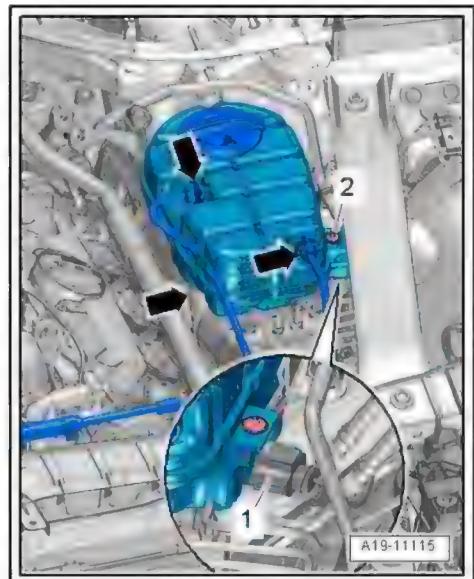
- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



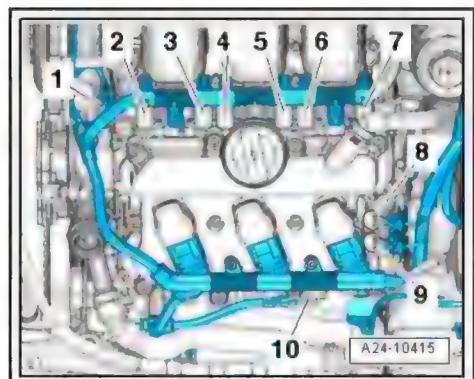
Step 2 - removing spark plugs, cylinder bank (left-side):

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- Unplug electrical connector -1- for coolant shortage indicator switch - F66- .
- Unscrew bolt -2- on coolant expansion tank.
- Place coolant expansion tank to one side with coolant hoses -arrows- attached.



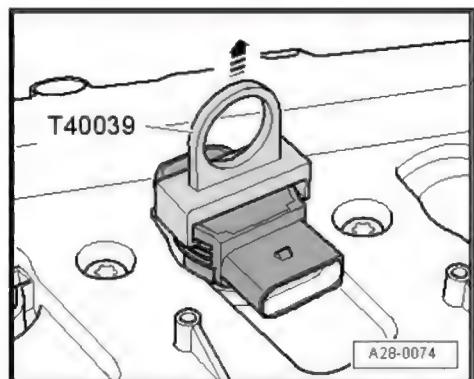
- Release and unplug electrical connectors -2-, -3-, -4-, -5-, -6-, -7-, -8- and -9- from actuators for camshaft adjustment.
- Unplug electrical connectors -1- at Hall sender 3 - G163- .
- Unscrew bolts for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (table [⇒ page 100](#)).
- Lubricate ignition coils [⇒ page 106](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Plug electrical connectors into actuators for camshaft adjustment so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation [⇒ page 100](#)).

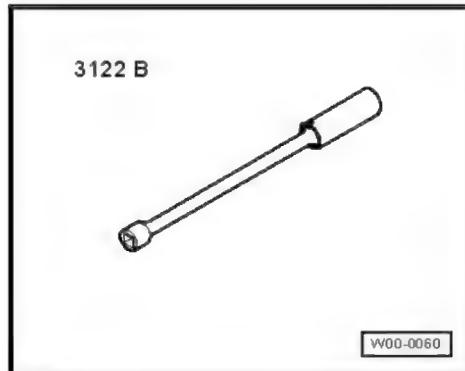


Continue installation in reverse sequence.

3.75.3 8-cyl. petrol engine 4.0 TFSI

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



- ◆ Puller - T10530-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5
Bolts for ignition coils	9

Removal steps:

- Remove engine cover panel [page 11](#).

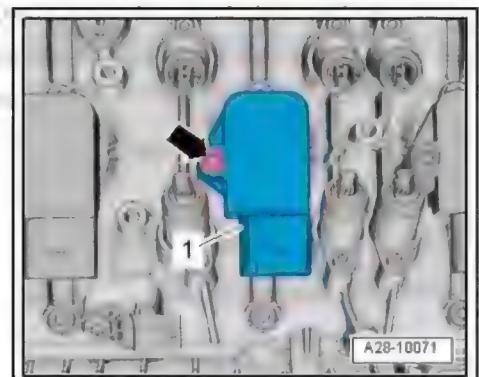
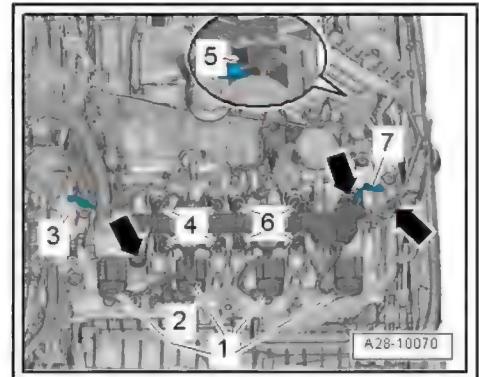
Step 1 - removing spark plugs, cylinder bank (right-side):

- Remove air cleaner housing ⇒ Rep. gr. 24 ; Removing and installing air cleaner housing

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- Unplug the following electrical connectors and move electrical wiring harness clear:

- 1 - For ignition coils -N70- , -N127- , -N291- , -N292-
- 2 - For Hall sender - G40-
- 4 - For inlet/exhaust cam actuators -F456- , -F457- , -F458- and -F459-
- 5 - For intake air temperature sender - G42-
- 6 - For inlet/exhaust cam actuators -F452- , -F453- , -F454- and -F455-
- Disconnect vacuum hoses -3- and -7-.
- Unscrew bolts -arrows- for connector rail.
- Push ignition coil connector towards ignition coil, release retainer and detach connector from ignition coil.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.
- Unscrew bolts -arrows- for ignition coils.



- Insert puller - T10530- into hole -1- of ignition coil and turn knurled nut -2- clockwise until puller is secured in place.

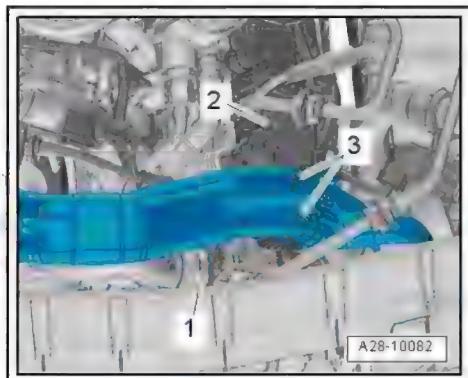
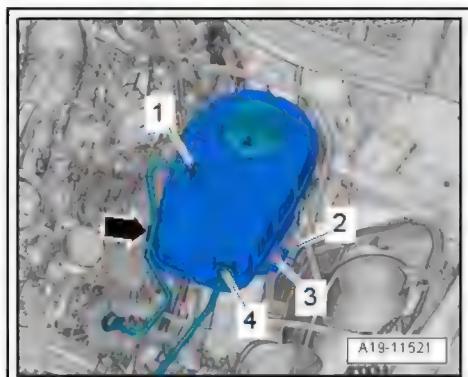


- Carefully pull ignition coil out upwards using puller - T10530 - .
- Repeat removal procedure with all other ignition coils.
- Unscrew spark plugs using spark plug socket and extension - VAS 3122B- .

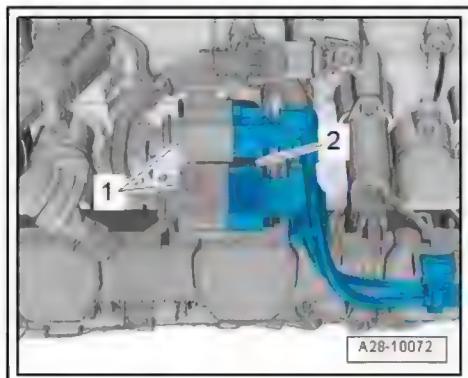
Step 2 - removing spark plugs, cylinder bank (left-side):

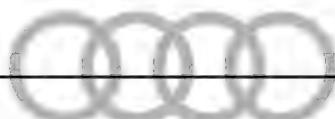


- Release retaining clips -1- and -4- and disconnect coolant hoses.
- Move coolant hose -arrow- clear.
- Unplug electrical connector -2- for coolant shortage indicator switch - F66- .
- Unscrew bolt -3- on coolant expansion tank.
- Lift coolant expansion tank out of bracket and place to one side.
- Move clear coolant hoses -3- and air pipe -1- at wiring guide -2-.



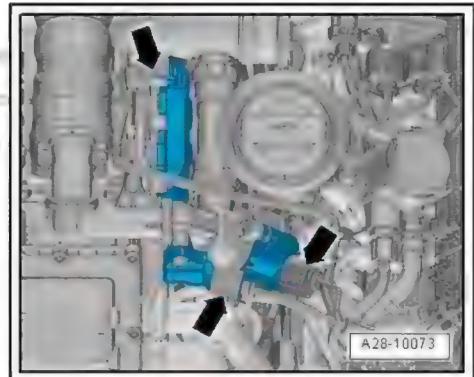
- Take electrical connectors -1- out of bracket -2-, unplug connectors and move wiring clear.
- Lift off bracket -2-.





- Unplug electrical connectors -arrows- and move wiring clear.

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- Unplug the following electrical connectors and move electrical wiring harness clear:

3 - For inlet/exhaust cam actuators -F464- , -F465- , -F466- and -F467-

4 - For fuel metering valve 2 - N402-

5 - For fuel pressure sender for low pressure - G410-

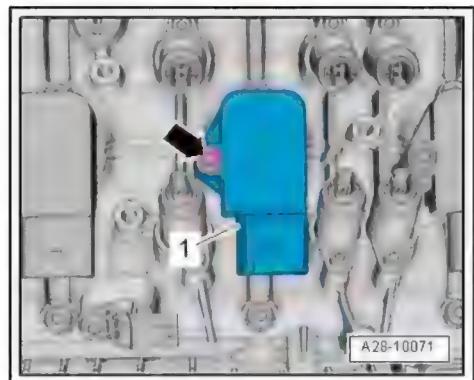
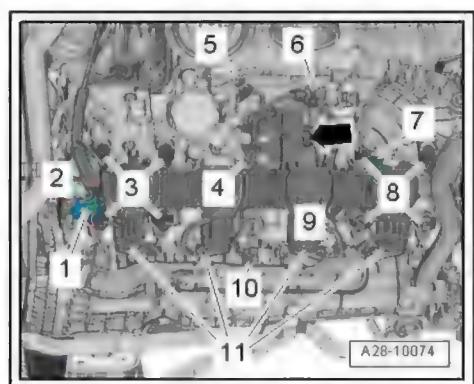
6 - For Hall sender 4 - G301-

8 - For inlet/exhaust cam actuators -F476- , -F477- , -F478- and -F479-

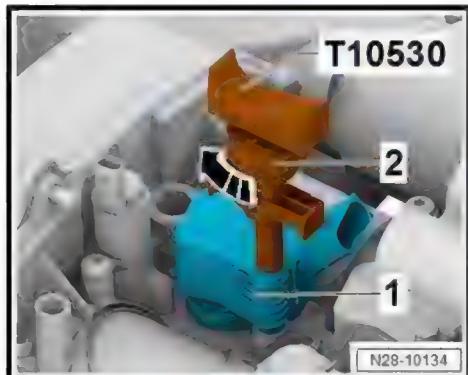
10 - For Hall sender 2 - G163-

11 - For ignition coils -N323- , -N324- , -N325- , -N326-

- Disconnect vacuum hoses -1- and -7-.
- Remove bolts -2-, -9- and centre hex stud -arrow- and move earth wire clear.
- Push ignition coil connector towards ignition coil, release retainer and detach connector from ignition coil.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.
- Unscrew bolts -arrows- for ignition coils.



- Insert puller - T10530- into hole -1- of ignition coil and turn knurled nut -2- clockwise until puller is secured in place.



- Carefully pull ignition coil out upwards using puller - T10530- .
- Repeat removal procedure with all other ignition coils.
- Unscrew spark plugs using spark plug socket and extension - VAS 3122B- .

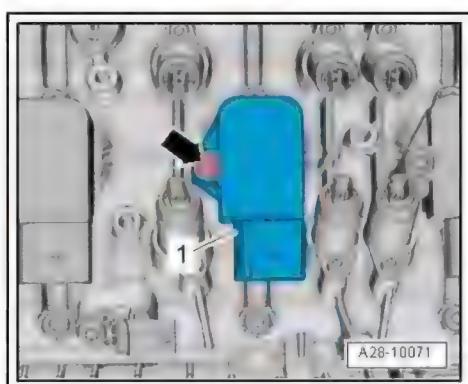
Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension
- VAS 3122B- and tighten to specified torque (table
⇒ page 102).
- Lubricate ignition coils ⇒ page 106 .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).



- Tighten bolts -arrow- for ignition coils to specified torque (see table of tightening torques for installation [⇒ page 102](#)).
- Plug in connector on each ignition coil until it engages.

Continue installation in reverse sequence.



3.75.4 Lubricating pencil-type ignition coils

Special tools and workshop equipment required

◆ **Silicone paste**

Procedure:

- Grease all around sealing hose -arrow- of ignition coils with silicone paste. The bead of grease should be 1-2 mm thick.



Note

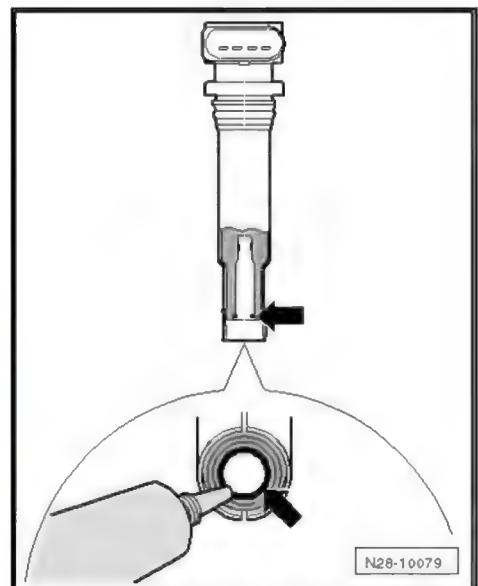
- ◆ *For the silicone paste to be used, refer to Electronic parts catalogue (ETKA).*
- ◆ *New ignition coils are already lubricated when they are delivered; it is not necessary to lubricate them again when installing.*



CAUTION

Ignition coils can be damaged irreparably if the wrong lubricant is used.

- Use only the approved silicone paste.



3.76 Coolant level: checking (coolant level must reach at least top marking on coolant expansion tank)



WARNING

Coolant expansion tank under pressure - risk of injuries!

- ◆ Only open coolant expansion tank when engine is cold.



CAUTION

Incorrect coolant additives can cause serious damage to vehicle components.

The coolant additive G12EVO is not approved for engines based on EA288 (A6 2.0 TDI).

 Note

- ◆ *Specification for coolant level is top marking on coolant expansion tank.*
- ◆ *Coolant additives may only be mixed with distilled water, as the effectiveness of the coolant and the corrosion protection it provides are greatly influenced by the quality of the water with which the coolant is mixed. To ensure an adequate water quality, the coolant additive should be mixed with distilled water.*
- ◆ *Only use approved coolant additives; refer to Electronic parts catalogue (ETKA).*
- ◆ *Coolant additives G12EVO, G13 and G12++ may be mixed together.*
- ◆ *G12EVO, G13 and G12++ may be mixed with coolant additives G11, G12 and G12+.*
- ◆ *G12 and G11 must NOT be mixed together.*
- ◆ *Do not reuse coolant.*
- ◆ *Only use water/coolant additive as a lubricant for coolant hoses.*
- ◆ *It is permissible to operate the vehicle if the coolant level is above the MAX marking on the coolant expansion tank (this is by technical design). Do NOT extract coolant.*
- ◆ *The vehicle must not be driven if the coolant level is below the top marking.*

Checking coolant level and anti-freeze [⇒ page 108](#)

Filling up coolant [⇒ page 110](#)

3.76.1 Checking coolant level and anti-freeze

Special tools and workshop equipment required

- ◆ Refractometer - T10007 A-



Table of test values and procedure guidelines:

Type of service:	Coolant level specification:
Delivery Inspection	Coolant at least at level of MAX marking.
Inspection	Coolant at level of MAX marking.

Checking the cooling system for leaks is a repair measure and should be charged separately.

Requirements:

- Anti-freeze protection must be guaranteed to -25 °C (in countries with an arctic climate to -36 °C); note specification in Maintenance table.
- The proportion of coolant additive must not exceed 55 % (gives anti-freeze protection down to -48 °C); beyond this concentration the frost protection and the cooling efficiency are reduced again.
- The vehicle must be parked on a level surface.

Step 1 - checking coolant level:

- Check coolant level (according to marking -illustration-) in coolant expansion tank with engine cold.
- If coolant level is too low: Add required amount (using correct mixture ratio) [⇒ page 110](#).
- If fluid losses are greater than can be reasonably expected: First use a leak test to determine the cause ⇒ Engine; Rep. gr. 19 ; Cooling system/coolant; Checking cooling system for leaks .



Step 2 - checking anti-freeze:

- Use a pipette to place a drop of coolant on glass of refractometer - T10007 A-. Light-dark border will now be clearly visible through refractometer.
- Check level of anti-freeze protection using corresponding scale on refractometer; to do so, read off value on light-dark border.
- If anti-freeze protection level does not meet specification in Maintenance table: Perform following measures:

Anti-freeze protection level: Evaluation/measure:

> Specification	Depending on deviation from specification, remove a small amount of coolant and replace it with distilled water. Repeat procedure until coolant mixture meets correct specification.
< Specification	Depending on deviation from specification, remove a small amount of coolant and replace it with coolant additive. Repeat procedure until coolant mixture meets correct specification.

- Check coolant additive concentration once more following road test.



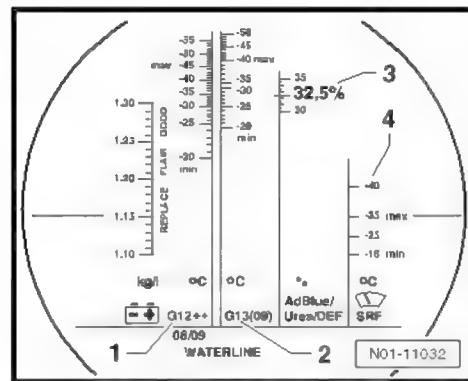
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Note

- ◆ The refractometer - T10007 A- must be used to determine the current anti-freeze concentration.
- ◆ Scale -1- on the refractometer applies to coolant additives G11, G12, G12+ and G12++.
- ◆ Scale -2- refers only to coolant additive G13.
- ◆ If more than one type of coolant additive has been used: Always use the scale for G13 to determine the anti-freeze protection.
- ◆ The temperature indicated on the refractometer - T10007 A- corresponds to the temperature at which the first ice crystals can form in the coolant.
- ◆ It is essential that anti-freeze be used in the cooling system all year round. In the correct concentration, coolant additives prevent scaling and frost and corrosion damage, and also raise the boiling point of the coolant.
- ◆ Because of its high boiling point, the coolant improves engine reliability under heavy loads in countries with tropical climates.



3.76.2 Filling cooling system

Table of test values and procedure guidelines:

Frost protection to:	Coolant additive:	Water:
-25 °C	approx. 40 %	approx. 60 %
-36 °C	approx. 50 %	approx. 50 %

Procedure:

- Add required amount (using mixture ratio according to anti-freeze protection specification in Maintenance table). Use the table as a reference for the coolant mixture ratio.



Note

Small quantities of coolant can simply be topped up. Use the cooling system charge unit - VAS 6096- to add larger quantities of coolant.

3.77 Air cleaner: renewing filter element and cleaning housing



Note

- ◆ Use only silicone-free lubricants when installing intake hoses.
- ◆ Secure all hose connections with hose clips (same as original equipment); see Electronic parts catalogue (ETKA).

Air cleaner housing: cleaning [page 118](#)

4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid [page 111](#)

6-cyl. petrol engine 2.5 FSI/2.8 FSI [page 112](#)

6-cyl. petrol engine 3.0 TFSI [page 113](#)

8-cyl. petrol engine 4.0 TFSI [page 115](#)

4-cyl. diesel engine 2.0 TDI [page 115](#)

6-cyl. diesel engine 3.0 TDI [page 117](#)

3.77.1 4-cyl. petrol engine 1.8/2.0 TFSI/2.0 TFSI hybrid

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Removal steps:

- Remove engine cover panel [page 11](#).

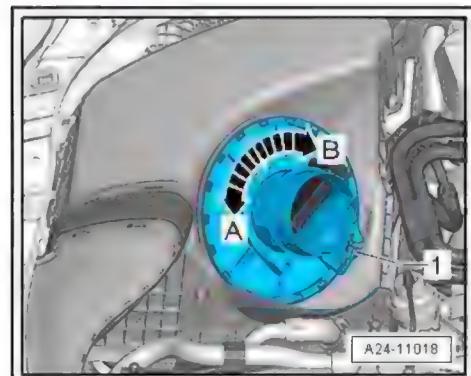
Step 1 - removing air filter element:

- Release hose clip -3- and detach air pipe.
- Unplug electrical connector -2- for air mass meter - G70- .

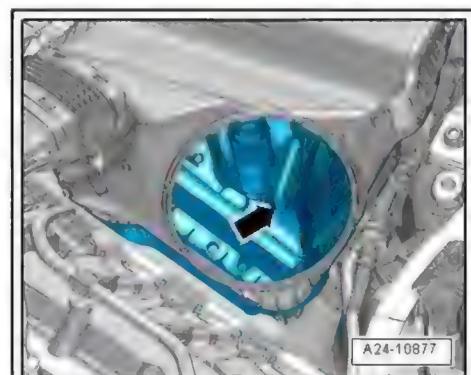


- Release retainer -1-.
- Turn filter element in anti-clockwise direction -arrow A- and remove it.

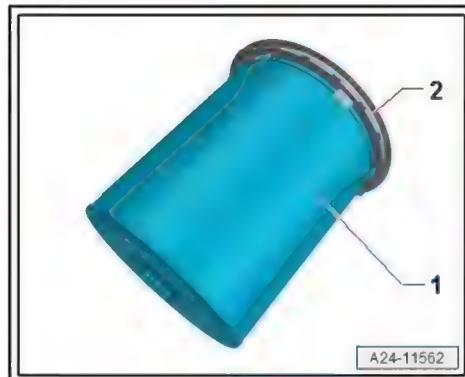
Step 2 - installing air filter element:



- Check for dirt in housing and water drains -arrow- and clean if necessary [page 118](#).



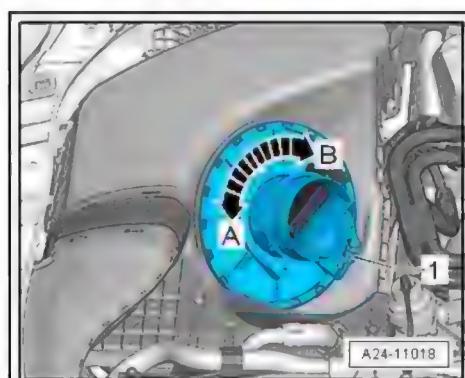
- Insert new filter element -1- centrally in housing cover -2-. Ensure that filter element is installed in correct direction and that all centring lugs engage in housing cover.



A24-11562

- Fit housing cover (with filter element attached) centrally into mounting in air cleaner housing and turn it in clockwise direction -arrow B- until it engages -1-.
- Attach air pipe to air cleaner (top section) and fit hose clip.
- Plug electrical connector for air mass meter - G70- back in.

Continue installation in reverse sequence.



A24-11018

3.77.2 6-cyl. petrol engine 2.5 FSI/2.8 FSI

Removal steps:

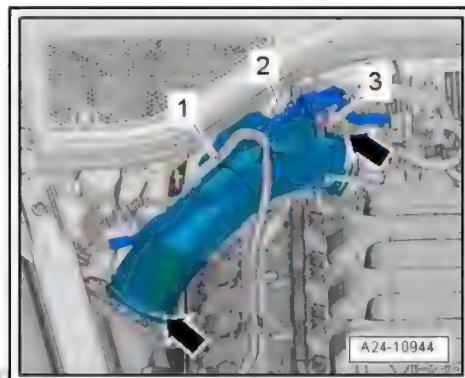
- Remove engine cover panel [page 11](#).

Step 1 - removing air filter element:

- Disengage fuel line -1- and hose -2- from retainer on air pipe.
- Disconnect vacuum hose -3- from air pipe.
- Loosen hose clips -arrows- and detach air pipe.



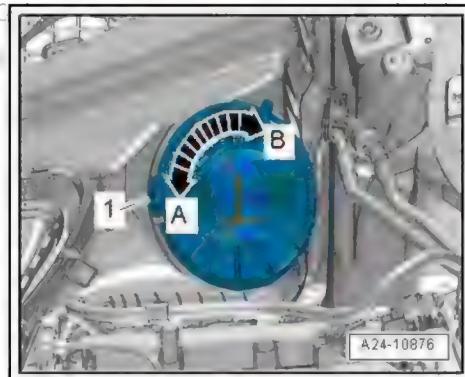
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A24-10944

- Release retainer -1-.
- Turn filter element in anti-clockwise direction -arrow A- and remove it.

Step 2 - installing air filter element:



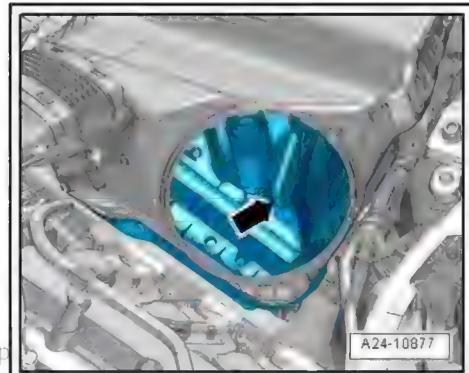
A24-10876

- Check for dirt in housing and water drains -arrow- and clean if necessary [⇒ page 118](#) .



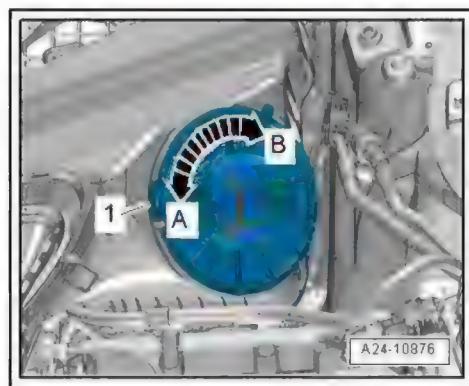
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- Insert new filter element -1- centrally in housing cover -2-. Ensure that filter element is installed in correct direction and that all centring lugs engage in housing cover.



- Fit housing cover (with filter element attached) centrally into mounting in air cleaner housing and turn it in clockwise direction -arrow B- until it engages -1-.
- Attach air pipe to air cleaner (top section) and fit hose clip.

Continue installation in reverse sequence.



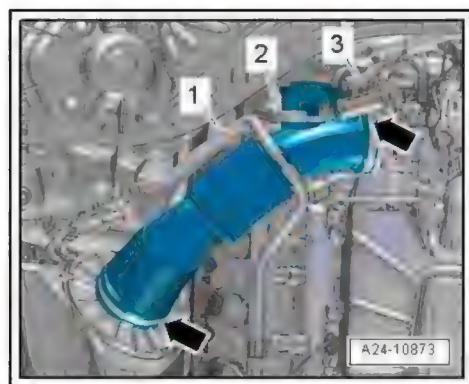
3.77.3 6-cyl. petrol engine 3.0 TFSI

Removal steps:

- Remove engine cover panel [⇒ page 11](#) .

Step 1 - removing air filter element:

- Disengage fuel line -1- and hose -2- from retainer on air pipe.
- Disconnect vacuum hose -3- from air pipe.
- Loosen hose clips -arrows- and detach air pipe.



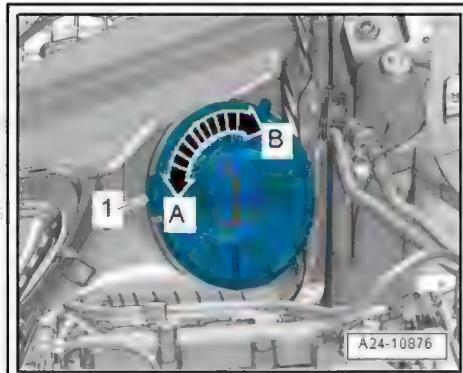


- Release retainer -1-.
- Turn filter element in anti-clockwise direction -arrow A- and remove it.

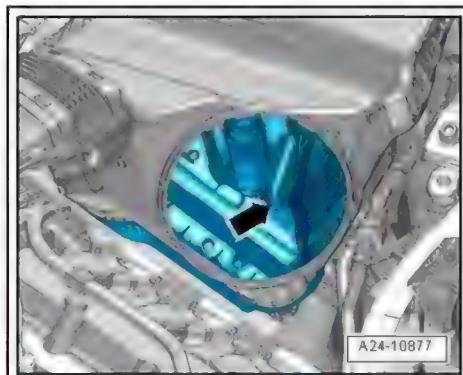
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Step 2 - installing air filter element:

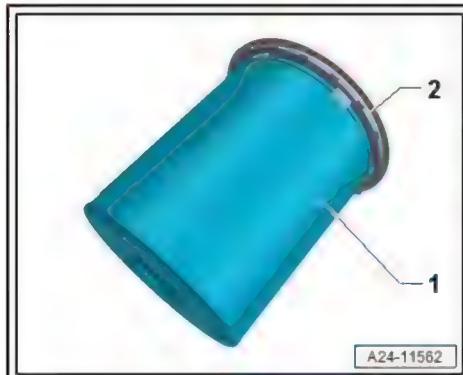
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with respect to the correctness of information in this



- Check for dirt in housing and water drains -arrow- and clean if necessary [⇒ page 118](#).

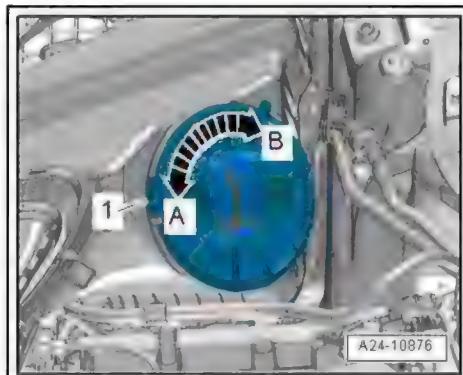


- Insert new filter element -1- centrally in housing cover -2-. Ensure that filter element is installed in correct direction and that all centring lugs engage in housing cover.



- Fit housing cover (with filter element attached) centrally into mounting in air cleaner housing and turn it in clockwise direction -arrow B- until it engages -1-.
- Attach air pipe to air cleaner (top section) and fit hose clip.

Continue installation in reverse sequence.

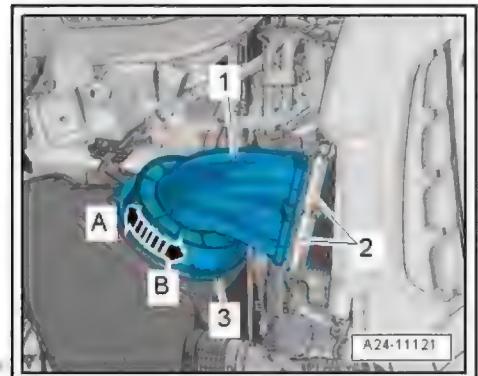


3.77.4 8-cyl. petrol engine 4.0 TFSI

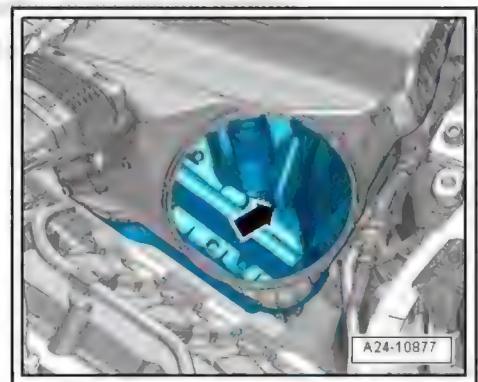
Step 1 - removing air filter element:

- Release hose clips -2- and detach air pipe.
- Release retainer -3-.
- Turn housing cover in anti-clockwise direction -arrow B- and remove filter element.

Step 2 - installing air filter element:

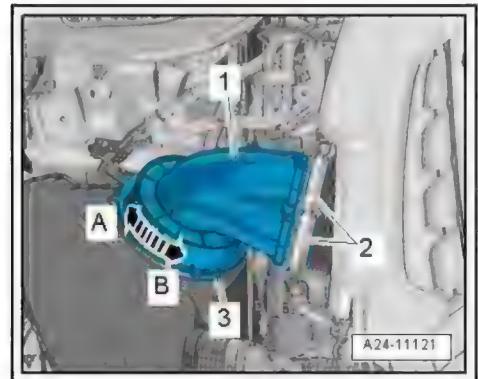


- Check for dirt in housing and water drains -arrow- and clean if necessary [⇒ page 118](#) correctness of information in this document
- Fit new filter element centrally in housing cover, ensuring that it is installed in correct direction.



- Fit housing cover (with filter element attached) centrally into mounting in air cleaner housing and turn it in clockwise direction -arrow A- until it engages -3-.
- Attach air pipe to air cleaner (top section) and fit hose clip.

Continue installation in reverse sequence.



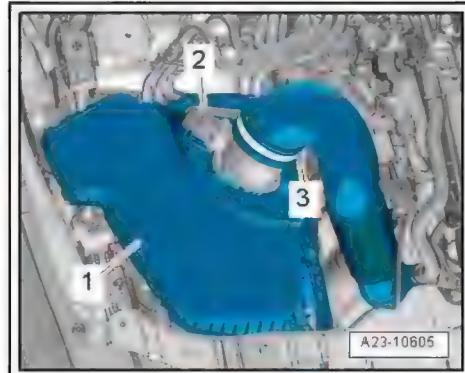
3.77.5 4-cyl. diesel engine 2.0 TDI

Removal steps:

- Remove engine cover panel [⇒ page 11](#) .

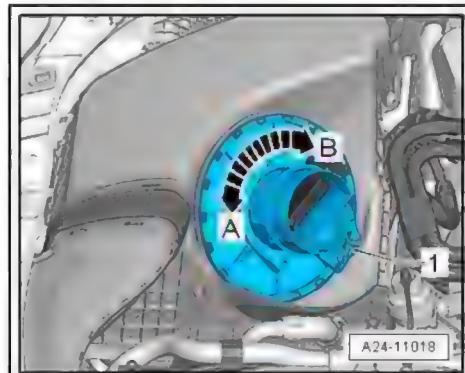
Step 1 - removing air filter element:

- Unplug electrical connector -2- for air mass meter - G70- .
- Release hose clip -3- and detach air pipe.

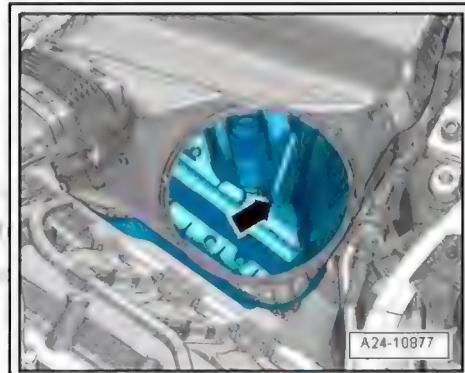


- Release retainer -1- on housing cover.
- Turn housing cover with filter element in anti-clockwise direction -arrow A- and remove it.

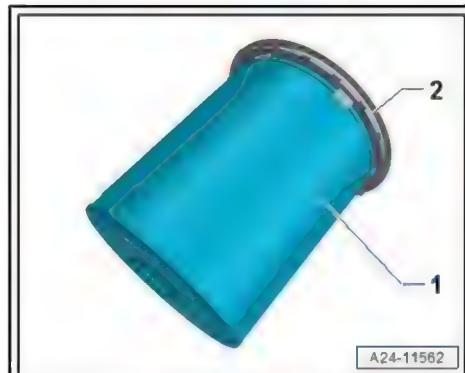
Step 2 - installing air filter element:



- Check for dirt in housing and water drains -arrow- and clean if necessary [⇒ page 118](#).



- Insert new filter element -1- centrally in housing cover -2-. Ensure that filter element is installed in correct direction and that all centring lugs engage in housing cover.
- Fit housing cover (with filter element attached) into mounting of air cleaner housing so that it is centred. When fitting, hold onto filter element as you insert it through opening for housing cover; ensure that it does not slip off centring lugs and become tilted when it is installed.



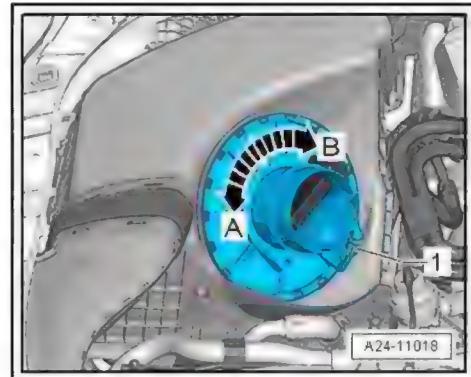
- Turn housing cover in clockwise direction -arrow B- until you feel it engage -1-.
- Attach air pipe to air cleaner (top section) and fit hose clip.
- Plug electrical connector for air mass meter - G70- back in.

Continue installation in reverse sequence.



Note

If the housing cover does not engage easily, this may indicate that the air filter element is not aligned properly or is tilted.



3.77.6 6-cyl. diesel engine 3.0 TDI

Removal steps:

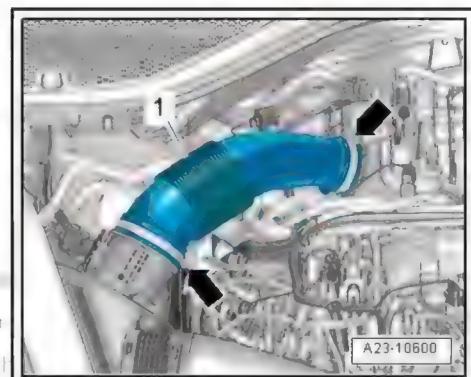
- Remove engine cover panel [⇒ page 11](#).

Step 1 - removing air filter element:

- Release hose clips -arrows- and detach air pipe -1-.

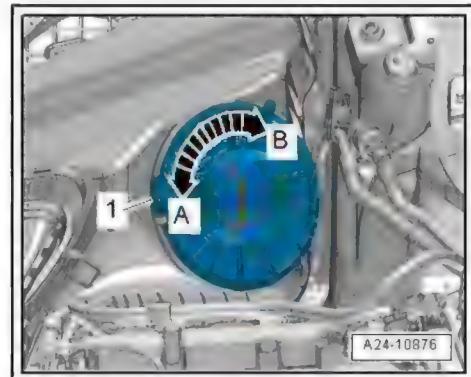


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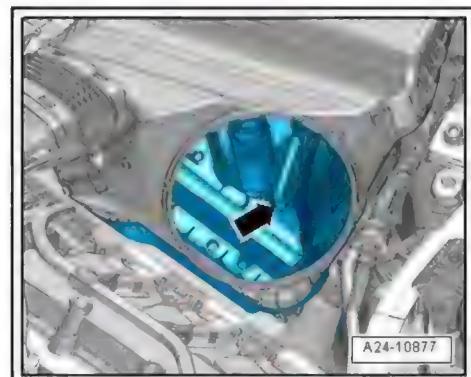


- Release retainer -1-.
- Turn filter element in anti-clockwise direction -arrow A- and remove it.

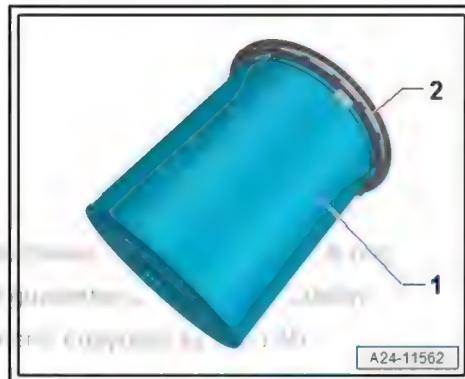
Step 2 - installing air filter element:



- Check for dirt in housing and water drains -arrow- and clean if necessary [⇒ page 118](#).

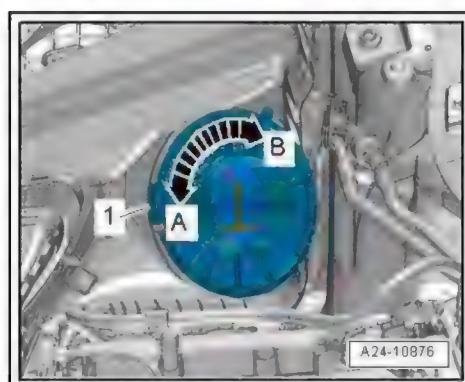


- Insert new filter element -1- centrally in housing cover -2-. Ensure that filter element is installed in correct direction and that all centring lugs engage in housing cover.



- Fit housing cover (with filter element attached) centrally into mounting in air cleaner housing and turn it in clockwise direction -arrow B- until it engages -1-.
- Attach air pipe to air cleaner (top section) and fit hose clip.

Continue installation in reverse sequence.



3.77.7 Cleaning air cleaner housing

Procedure:

- Remove any loose dirt or leaves out of air cleaner housing (top and bottom sections).
- Check whether water drain hose in air cleaner (bottom section) is dirty or blocked and clean if necessary.

Note

- ◆ When cleaning air cleaner housing with compressed air: Cover air mass meter with a clean cloth.
- ◆ On vehicles for cold countries, the snow screen in the intake section must also be cleaned; see specification in ELSA Maintenance table.

3.78 Plenum chamber and water drains: checking for dirt

DANGER

Risk of fatal injury if high-voltage components are damaged.

- ◆ Observe warnings for high-voltage system:
- ◆ Handling high-voltage wires [⇒ page 7](#).
- ◆ For work in the vicinity of high-voltage components [⇒ page 6](#).

Checking plenum chamber and water drains for dirt
[⇒ page 119](#)

Cleaning plenum chamber and water drain valves [⇒ page 120](#)

3.78.1 Checking plenum chamber and water drains for dirt

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

Table of tightening torques for installation:

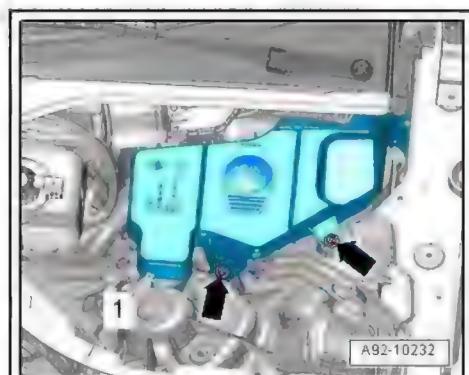
Component/fastener	[Nm]
Bolts for washer fluid reservoir	8

Cleaning the plenum chamber, as well as the removal procedures required, are a repair measure and should be charged separately.

Removal steps:

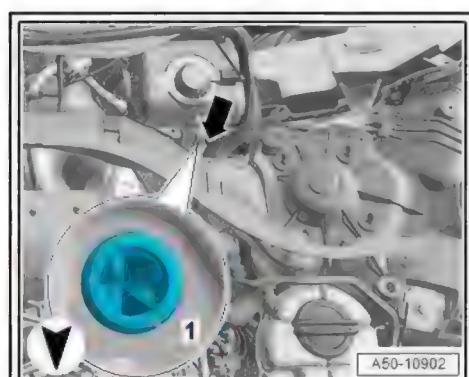
- Remove plenum chamber cover [⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover](#) .
- Remove bolts -arrows- for washer fluid reservoir -1-.
- Carefully lift filler neck, but do not remove completely.

Step 1 - checking plenum chamber and water drains (driver's side):



- Check for dirt in water drain grommet -1- and bottom of plenum chamber using a hand-held light.
- If no dirt was found: Carefully pour a small amount of water into plenum chamber and check that water drains quickly and fully.
- If necessary, clean plenum chamber and water drains [⇒ page 120](#) .

Step 2 - checking plenum chamber and water drains (passenger's side):



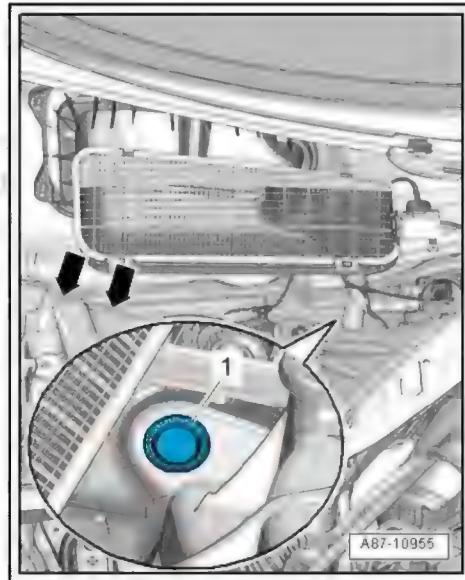
- Check for dirt in water drain grommet -1- and water drains -arrows- using a hand-held light.
- If necessary, clean plenum chamber and water drains [⇒ page 120](#).

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation [⇒ page 119](#)).



Note

If the water you have poured in does not drain out or drains out very slowly, this is a sign that the water drains -arrows- are fully or partly blocked.



3.78.2 Cleaning plenum chamber and water drains

Special tools and workshop equipment required

- ◆ Suction feed spray-gun - VAG 1538-
- ◆ Nylon probe - VAG 1538/2-
- ◆ Flexible picking tool

Cleaning the plenum chamber, as well as the removal procedures required, are a repair measure and should be charged separately.

Procedure:

- Remove coarse dirt from plenum chamber and water drain grommets with a flexible picking tool.
- Remove fine dirt using suction-feed spray gun - V.A.G 1538- and nylon probe - V.A.G 1538/2- or a thin water hose.

3.79 Dust and pollen filter: renewing

Preliminary filter [⇒ page 120](#)

Main filter [⇒ page 121](#)

3.79.1 Preliminary filter

Equipment version for certain countries: Note specification in Maintenance table.

The preliminary filter is fitted in the vehicle plenum chamber.

Removal steps:

- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .

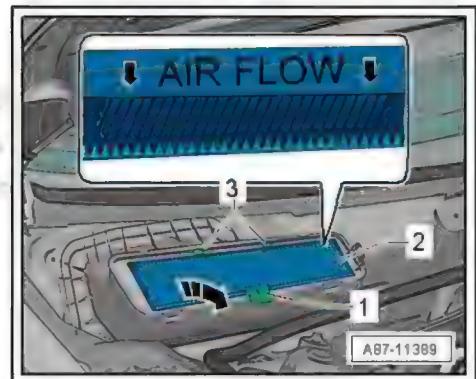
Step 1 - removing filter element:

- Release retainer -1-.
- Take out filter element -2- under retainers -3- in direction of -arrow-.

Step 2 - installing filter element:

- Clean surrounding area (e.g. with a vacuum cleaner) after removing filter element.
- Fit new filter element -2- so that arrows indicating direction of flow point downwards.

Continue installation in reverse sequence.



3.79.2 Main filter

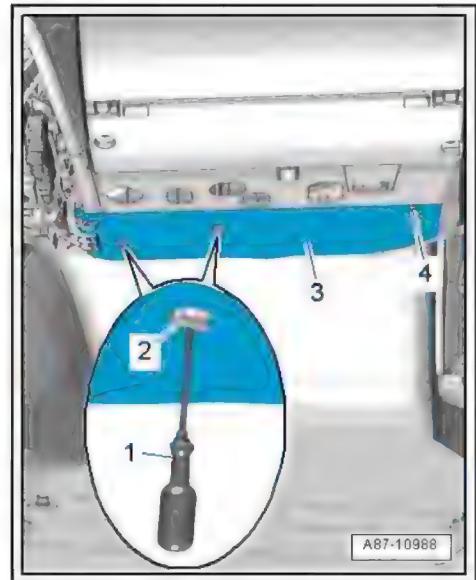
The dust and pollen filter is fitted under the glove box.

Removal steps:

- On vehicles with special equipment used by driving schools: Remove pedal cluster if necessary; see installation instructions for equipment for driving schools.

Step 1 - removing filter element:

- Cover footwell beneath dust and pollen filter with paper.
- Unfasten quick-release fastener -2- with screwdriver -1-.
- Disengage cover -3- at retainer -4- and detach.

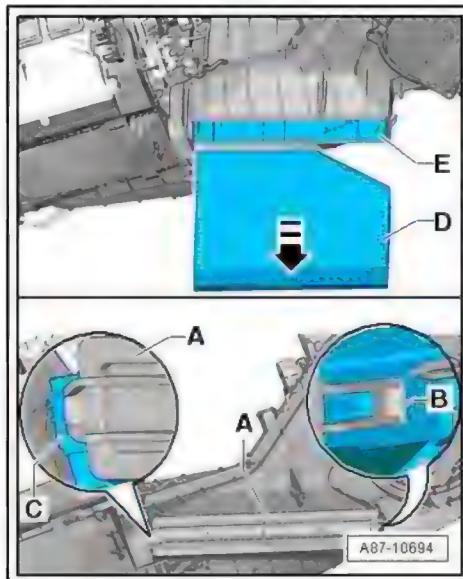


- Release retaining tab -B-, swivel cover -A- for aperture down and detach.
- Pull filter element -D- out of aperture -E- in direction of -arrow-.

Step 2 - installing filter element:

- Clean aperture -E- with a vacuum cleaner before fitting new filter element.
- Fit new filter element -D- correctly: angled side faces fresh air blower.
- Position aperture cover -A- in tab -C- and engage on opposite side -B-.

Continue installation in reverse sequence.



3.80 Fuel filter: draining

⚠ WARNING

Fuel is hot and under pressure - risk of injuries!

- ◆ Put on protective gloves.
- ◆ Put on safety goggles.
- ◆ Loosen draining valve carefully.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Diesel-resistant hose with appropriate diameter: must not slip off draining valve under system pressure
- ◆ Reservoir

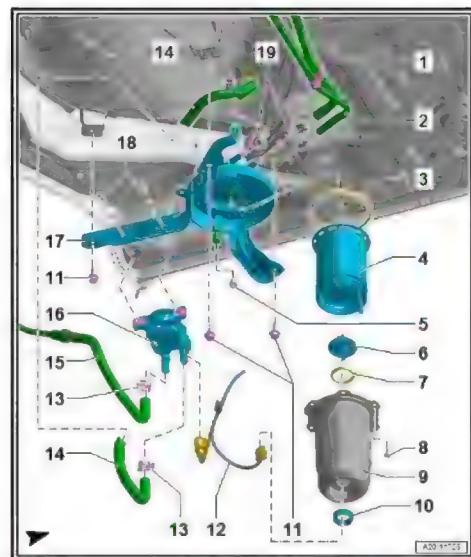
Table of tightening torques for installation:

Fastener	Tightening torque [Nm]
Water drain plug -5-	10

The fuel filter is located on the underbody at the rear of the vehicle.

Procedure:

- Attach hose to water drain plug -5- on cover of filter housing. Place opposite end of hose in appropriate container.
- Start engine. System pressure is necessary for draining fuel filter.
- Open water drain plug slowly until water begins to drain.
- When diesel fuel begins to drain: Screw water drain plug back in.
- Turn off engine and disconnect hose from water drain plug.
- Tighten water drain plug -5- to specified torque (see table of tightening torques for installation [⇒ page 122](#)).



3.81 Fuel filter: renewing



WARNING

Fuel is hot and under pressure - risk of injuries!

- ◆ Put on protective gloves.
- ◆ Put on safety goggles.
- ◆ Allow connections of fuel lines to cool down.
- ◆ Place cloths around connections and loosen them carefully.

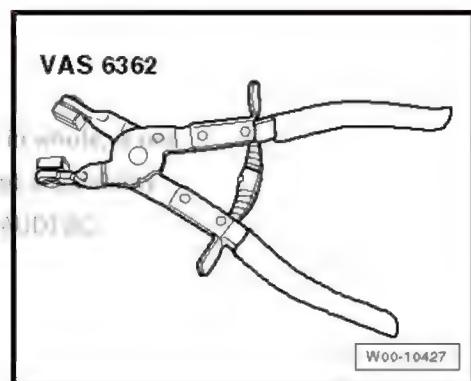
Fuel filter without water separator [⇒ page 123](#)

Fuel filter with water separator [⇒ page 124](#)

3.81.1 Fuel filter without water separator

Special tools and workshop equipment required

- ◆ Hose clip pliers - VAS 6362-



- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Reservoir

Table of tightening torques for installation:

Fastener	Tightening torque [Nm]
Nuts on bracket	2

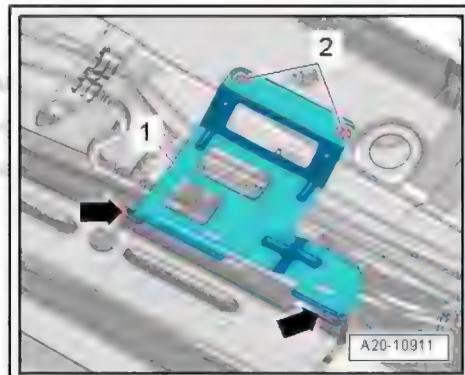
The fuel filter is located on the underbody.

Removal steps:

- Remove underbody trim (right-side) ⇒ Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .

Step 1 - removing:

- Observe the safety precautions when working on the fuel system ⇒ Fuel supply system, diesel engines; Rep. gr. 00 ; Safety precautions; Safety precautions when working on the fuel system .
- Remove nuts -2-.
- Swivel bracket downwards, disengage it from mounting points -arrows- and detach it.
- Place drip tray under fuel filter.



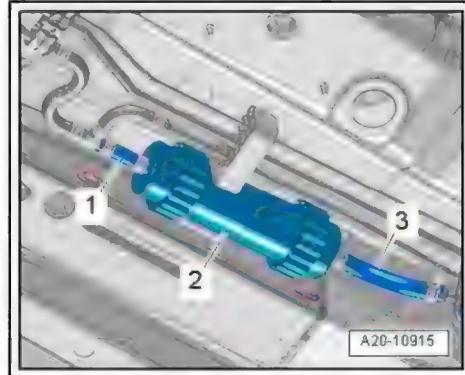
- Using hose clip pliers, disconnect fuel supply hoses -1- and -3- at T-piece and leading to aluminium pipe, and remove fuel filter -2-.

Step 2 - installing:

Install in reverse sequence. Note tightening torque. Table of tightening torques for installation ⇒ [page 124](#)

Flow direction is indicated by arrows on filter housing.

- Then bleed fuel system ⇒ Engine; Rep. gr. 23 ; Injection system; Filling/bleeding fuel system .



 Note

- ◆ *Do not loosen spring-type clips on fuel filter.*
- ◆ *Spring-type clips and fuel lines leading from the fuel filter to the T-piece and to the aluminium pipe must be renewed; refer to Electronic parts catalogue (ETKA).*

3.81.2 Fuel filter with water separator

Special tools and workshop equipment required

◆ Diesel extractor - VAS 5226-



- ◆ Hose clamps, up to Ø 25 mm - 3094-



- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

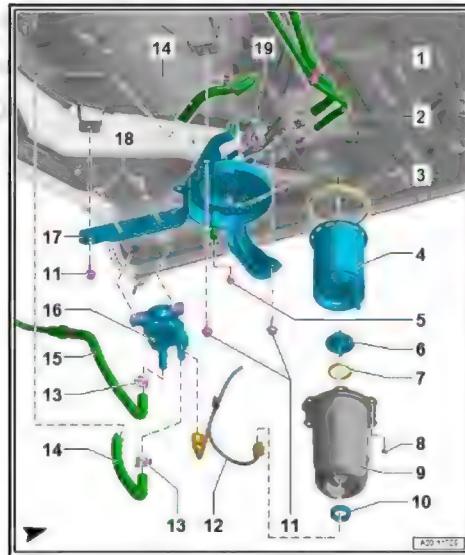
Table of tightening torques for installation:

Fastener	Tightening torque [Nm]
Water drain plug -5-	10
Bolts for filter housing -8-	9



Step 1 - removing:

- Pro Clamp off supply hose for underbody hose -14- with hose clamps, up to Ø 25 mm - 3094- .
- Fit hose of diesel extractor - VAS 5226- together with suitable adapter onto water drain plug -5-.
- Open water drain plug -5-.
- Operate diesel extractor - VAS 5226- until no more diesel emerges.
- Tighten water drain plug -5- to specified torque (see table of tightening torques for installation [⇒ page 125](#)).
- Unscrew bolts -8- and detach filter housing.
- Remove filter element -4- and seal -3- from filter housing -9-.
- Use diesel extractor - VAS 5226- to draw off remaining diesel fuel.
- Clean filter housing -9-.



Step 2 - installing:

- Insert new filter element in filter housing so that it is centred.
- Fit new seal.
- Insert and align filter housing. Make sure that filter housing is screwed on in correct position.
- Fit bolts for filter housing -8- and tighten to specified torque (see table of tightening torques for installation [⇒ page 125](#)).
- Remove hose clamps, up to Ø 25 mm - 3094- from supply hose for underbody hose.
- Finally, bleed fuel system ⇒ Rep. gr. 23 ; Injection system; Filling/bleeding fuel system .

3.82 Fuel tank: adding fuel additive

Special tools and workshop equipment required

- ◆ Or: multi-purpose additive for petrol fuels - G 001 780 M3-

Table of test values and procedure guidelines:

China, Middle East	Russia	India
VW 507 53 B: Applies to all petrol engines	VW 507 53 B: Applies to all petrol engines VW 507 53 A: Applies to all petrol engines except g-tron and E85 flexible fuel	VW 507 53 B: Applies to all petrol engines VW 507 53 A: Applies to all petrol engines except g-tron and E85 flexible fuel
Multi-purpose additive for petrol fuels - G 001 780 M3-	Multi-purpose additive for petrol fuels - G 001 780 M3-	Multi-purpose additive for petrol fuels - G 001 780 M3-

This maintenance item only applies to certain countries: Note specification in Maintenance table.

Procedure:

- Follow measuring guidelines on fuel additive container and add fuel additive to fuel tank according to current fuel tank level.



Note

- ◆ Use only fuel additives that correspond to the standard VW 507 53 A or VW 507 53 B.
- ◆ After adding fuel additive, it is very important to tell the customer to fill up the fuel tank.
- ◆ Use no more than one container per filling, even if the tank has a capacity > 60 litres.

3.83 Reducing agent (AdBlue®): filling up tank completely



WARNING

Risk of injury due to contact with reducing agent!

- ◆ Do not kink lines of filling device/refuelling system.
- ◆ If you come into contact with this liquid: Rinse it off immediately with plenty of water and contact a medical professional.



CAUTION

Risk of damage to trim and body components due to contact with reducing agent!

- ◆ Do not kink lines of filling device/refuelling system.
- ◆ Clean the affected areas with clean water and a cotton cloth.
- ◆ Remove any crystallised reducing agent using warm water and a sponge.



Note

- ◆ The reducing agent is statutory for vehicles with SCR system.
- ◆ The reducing agent is used for the after-treatment of exhaust gases of diesel-engined vehicles, i.e. to reduce the level of nitrogen oxides.
- ◆ The reducing agent is not a diesel additive and must not be filled into the diesel fuel tank.
- ◆ Do not add any additives to the reducing agent, and do not dilute it with water.
- ◆ Only use the reducing agent as supplied in its original container.
- ◆ In addition, please observe the reducing agent manufacturer's notices on usage and storage.
- ◆ Both filling device for AdBlue - VAS 6542- and AdBlue refuelling system - VAS 6960- can be used to fill up the reducing agent.

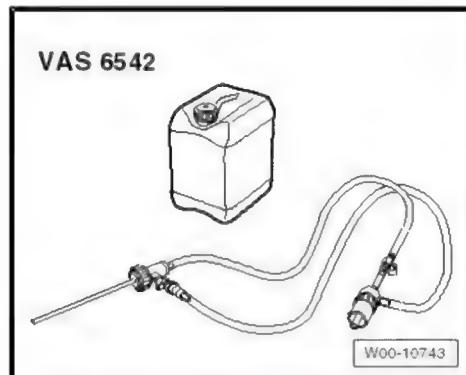
Filling up reducing agent (AdBlue®) using filling device for AdBlue - VAS 6542- [page 128](#)

Filling up reducing agent (AdBlue®) using AdBlue refuelling system - VAS 6960- [⇒ page 130](#)

3.83.1 Filling up reducing agent (AdBlue®) using filling device for AdBlue - VAS 6542-

Special tools and workshop equipment required

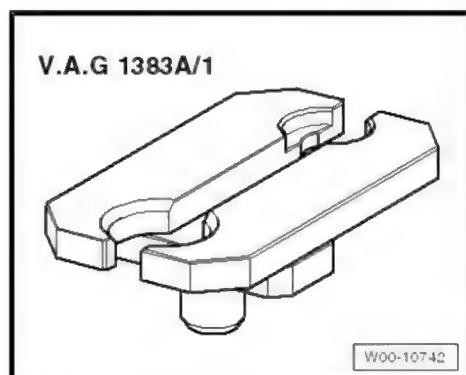
◆ Filling device for AdBlue - VAS 6542-



◆ Engine and gearbox jack - VAS 6931-

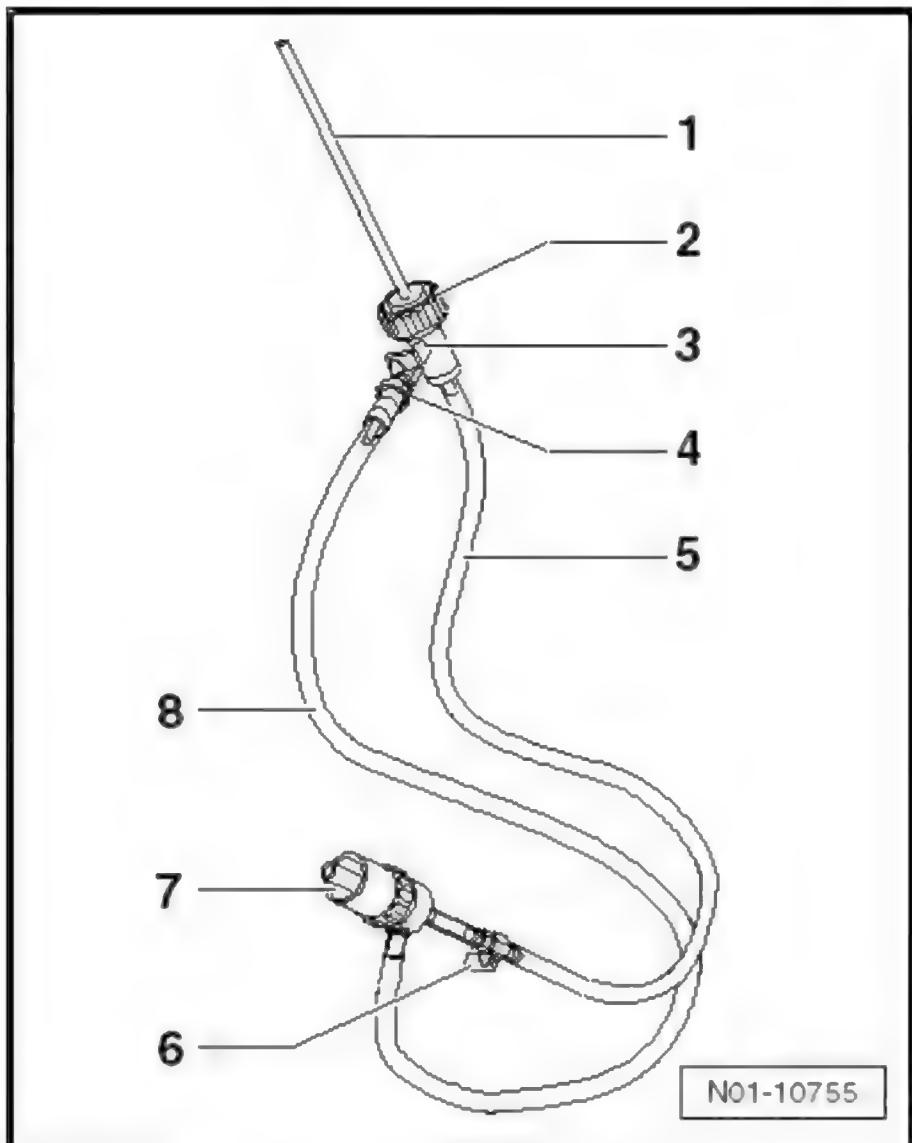


◆ Mounting plate - V.A.G 1383A/1-



Components of filling device -VAS 6542-

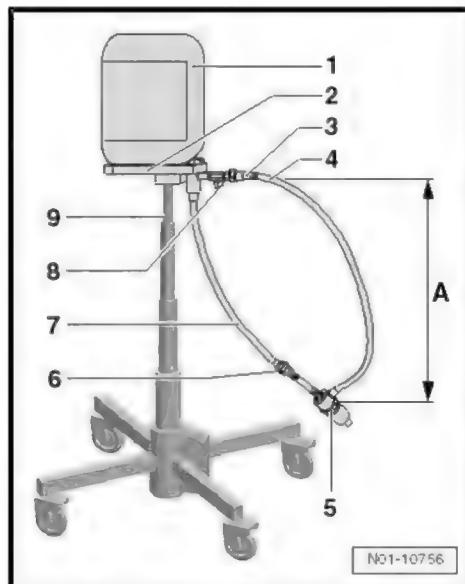
- 1 - Breather connection for reducing agent container
- 2 - Union nut for reducing agent container
- 3 - Cut-off valve for breather line
- 4 - Quick-release coupling on breather line
- 5 - Filler line
- 6 - Cut-off valve for filler line
- 7 - Union nut for fuel filler neck
- 8 - Breather line



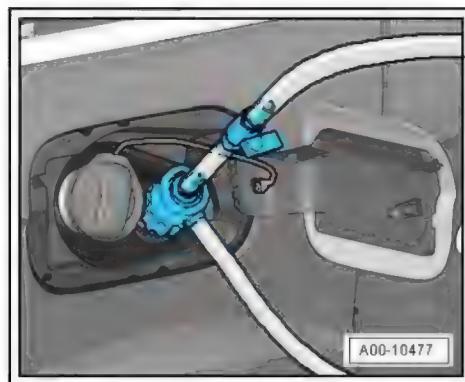
Procedure:

- Open tank flap and unscrew cap of reducing agent tank.
- Clean filler neck of tank for reducing agent with a lint-free cotton cloth soaked with water.
- Close cut-off valves of breather and filler lines of filling device for AdBlue - VAS 6542-.
- Apply filling device for AdBlue - VAS 6542- to reducing agent container (see Electronic parts catalogue, ETKA) and screw it on as far as stop.

- Position reducing agent container on engine and gearbox jack - VAS 6931- with mounting plate - V.A.G 1383A/1- . The difference in height of the reducing agent container and the filler neck of the tank for reducing agent must be between 60 - 80 cm -dimension A-.



- Position filling device for AdBlue - VAS 6542- on filler neck on vehicle and screw it on as far as stop.
- Open cut-off valve for breather line.
- Open cut-off valve for filler line and fill reducing agent tank of vehicle completely. Tank is completely full when container contracts and bleeder line fills with liquid.
- Close cut-off valve for filler line.
- Close cut-off valve for breather line.
- Disconnect quick-release coupling on breather line and let any excess liquid flow into a suitable container.
- Unscrew filling device for AdBlue - VAS 6542- from fuel filler neck.
- Clean filler neck of reducing agent tank and filler cap with a lint-free cotton cloth soaked with water.
- Screw filler cap onto reducing agent tank.
- Take container off mounting plate and put it on the floor.
- Open cut-off valve on filler line and let remaining liquid drain back into container.
- Unscrew filling device for AdBlue - VAS 6542- from container.



Note

It is possible to overfill the reducing agent tank when using a filling device which operates using gravity. When filling the tank using VAS 6542 (or other filling device which operates in the same way), disconnect it from the vehicle immediately once filling is completed.

3.83.2 Filling up reducing agent (AdBlue®) using AdBlue refuelling system - VAS 6960-

Special tools and workshop equipment required



◆ AdBlue refuelling system - VAS 6960-

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Procedure:

- Open tank flap and unscrew filler cap for reducing agent tank.
- Clean filler neck of tank for reducing agent with a lint-free cotton cloth soaked with water.
- Insert nozzle of AdBlue refuelling system - VAS 6960- into filler neck of reducing agent tank.
- Operate nozzle to fill up reducing agent completely.
- Remove nozzle from filler neck of reducing agent tank.
- Clean filler neck of reducing agent tank and filler cap with a lint-free cotton cloth soaked with water.
- Screw filler cap onto reducing agent tank.



Note

- ◆ *Observe operating instructions for AdBlue refuelling system - VAS 6960-.*
- ◆ *Nozzle of AdBlue refuelling system - VAS 6960- switches off automatically when maximum fill level is reached.*

3.84 Vehicle doors: removing edge protection

Procedure:

- Carefully remove edge protection from all vehicle doors.

3.85 Vehicle exterior: checking unprotected areas for dirt, and cleaning if necessary

Procedure:

- Check unprotected areas of vehicle exterior not covered by car cover or protective transport film for dirt/soiling.
- Clean any dirty areas.

3.86 Vehicle exterior: removing protective film, if present

Procedure:

- Remove protective film carefully and completely.

3.87 Vehicle cover: checking position and correcting if necessary

Procedure:

- Check, and if necessary, correct position of vehicle cover on vehicle body.
- Check, and if necessary, correct position of protective transport film.

3.88 Vehicle cover: removing according to manufacturer's instructions

Procedure:

- Vehicle cover: Remove according to manufacturer's instructions.

3.89 Paintwork, trims, side windows and wiper blades: checking cleanliness

Procedure:

- Check that exterior paintwork, trims, side windows and wiper blades are clean.
- Clean any dirty components.

3.90 Body: checking vehicle paintwork for damage and corrosion from below and with bonnet, rear lid and doors open

Procedure:

- Open all vehicle doors, bonnet and rear lid.
- Check vehicle paintwork on inside and outside of body for damage and corrosion.
- Rectify defects of any kind (repair measure).

3.91 Vehicles parked outdoors: locking

Procedure:

- Use vehicle key to lock vehicle if it is parked outdoors.

3.92 Road test

Procedure:

- The following points must be checked during the road test:
 - ◆ Engine: performance, misfiring, idling speed, acceleration, starting behaviour (engine cold and warm), engine noise
 - ◆ Clutch: pulling away, pedal pressure, odours, noise due to load change
 - ◆ Manual gearbox: ease of operation, gear lever position, gearbox noise
 - ◆ Automatic gearbox: selector lever position, shift lock / ignition key lock, gearbox noise, kickdown, shift behaviour, instrument cluster display
 - ◆ Brake pedal and handbrake: operation, travel and effectiveness, pulling to one side, response (delayed braking), juddering, squeal

- ◆ ABS function: pulsing must be felt at brake pedal when performing ABS-controlled braking.
- ◆ Steering: operation, steering free play, steering wheel centralised when wheels are in straight-ahead position, moving off line when travelling straight
- ◆ Imbalance: wheels, drive shafts
- ◆ Wheel bearings: noises
- ◆ Roof insert: unusual noise during operation
- ◆ Horn: checking
- ◆ Hybrid vehicles: check electrical operation by pressing EV button, charging function in overrun phases



Note

To what extent all of these can be checked depends on vehicle equipment and local conditions (urban/country).

3.93 Stock vehicles: observing measures specified in Maintenance table for stock vehicles (see "Before handing vehicle over to customer")

This maintenance item only applies to stock vehicles.

Procedure:

- Before handing vehicle over to customer: Check whether the following three measures for stock vehicles (as specified in the Maintenance table) are due, and carry them out as necessary:
 - ◆ For vehicles older than 12 months (from date of manufacture): Renew brake fluid [⇒ page 40](#).
 - ◆ For vehicles with a defective battery: Renew battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery; Removing and installing battery, vehicles without high-voltage system .
 - ◆ Check brake discs for surface rust; if necessary, operate brakes to remove rust according to manufacturer's instructions.
- Record measures performed in maintenance table for stock vehicles.

3.94 Accessories: installing

Procedure:

- Place any accessories included with the vehicle in the vehicle tool kit.
- Insert SD card for MMI.



Note

- ◆ *The available accessories may vary according to model, equipment and market.*
- ◆ *Depending on the vehicle model, the accessories may be found in the luggage compartment, glove box or supplied pack.*

3.95 Protective display films: removing if present

Procedure:

- If present, pull protective films off all displays in the vehicle and dispose of them.

3.96 "TQS – Documentation of the vehicle care" checklist: checking that list is present

Procedure:

- Check that checklist "TQS - Documentation of the vehicle care" is in glove box or front passenger footwell. This checklist is only present in vehicles which remained with the Importer or manufacturer longer than 14 days without being transported further; it documents all cleaning and care work carried out there.
- If missing, place checklist "TQS - Documentation of the vehicle care" in glove box.

3.97 "Stock vehicle maintenance" checklist: signing and placing in vehicle wallet

Procedure:

- Sign "Stock vehicle maintenance" checklist and place it in vehicle wallet.

3.98 Cleaning and care: checking that required measures have been carried out on time

Procedure:

- Check that all cleaning and care measures due previously were carried out on time.
- Carry out and document any cleaning and care which is due.

3.99 Stock vehicle care management: deciding and recording date of next check

Procedure:

- Decide date of next check with person in charge of stock vehicle care management.
- Record chosen date in maintenance table.

3.100 Rear final drive: changing gear oil

Procedure:

- Change gear oil according to specifications in Workshop Manual ⇒ Rear final drive 0BC, 0BD, 0BE, 0BF; Rep. gr. 39 ; Gear oil; Draining and filling gear oil .

3.101 Rear final drive: changing ATF

Procedure:

- Change ATF according to Workshop Manual ⇒ Rep. gr. 39 ; ATF; Draining and filling ATF .

3.102 Display instruments: setting time and date

Procedure:

- Change settings of display instruments: Refer to Operating Manual for radio/sound system/MMI system.

3.103 Manual gearbox/automatic gearbox: selecting 1st gear/park

Procedure:

Vehicles with manual gearbox: Select 1st gear.

Vehicles with automatic gearbox: Select park position.

3.104 Automatic gearbox (multitronic): changing ATF

Procedure:

- Change ATF according to Workshop Manual ⇒ ; Rep. gr. 37 ; ATF; Draining and filling ATF .

3.105 Automatic gearbox (tiptronic): changing ATF

Procedure:

- Change ATF according to Workshop Manual ⇒ ; Rep. gr. 37 ; ATF; Draining and filling ATF .

3.106 Dual clutch gearbox (S tronic): changing ATF

- Change ATF according to Workshop Manual ⇒ Rep. gr. 34 ; ATF; Draining and filling ATF .

3.107 Dual clutch gearbox (S tronic): changing ATF and renewing exchangeable ATF filter

Procedure:

- Change ATF according to Workshop Manual ⇒ Rep. gr. 34 ; ATF; Draining and filling ATF .
- Renew exchangeable ATF filter according to Workshop Manual ⇒ ; Rep. gr. 34 ; ATF circuit; Removing and installing ATF filter .

3.108 Interior mirror: calibrating compass

 **WARNING**

Risk of injury as engine of high-voltage vehicle can start unexpectedly!

- ◆ Observe warnings for high-voltage system:
- ◆ For work that must be performed with the ignition switched on ⇒ [page 8](#) .

Procedure:

- Calibrate compass according to Workshop Manual ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Calibrating digital compass .

3.109 Poly V-belt for supercharger with charge air coolers: renewing

Procedure:

- Renew poly V-belt for supercharger with charge air coolers according to specifications in Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

3.110 Poly V-belt for ancillaries, belt tensioner, idler rollers and pulley for coolant pump: renewing

Procedure:

Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

- Renew belt tensioner, idler rollers and pulley for coolant pump according to Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end) .

3.111 Poly V-belt for ancillaries: renewing

Procedure:

- Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

3.112 Poly V-belt for ancillaries and pulleys for coolant pump and power steering pump: renewing

Procedure:

- Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
- Renew pulleys according to Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end) .

3.113 Instrument cluster: resetting driver information system

Procedure:

- Reset single journey memory and total journey memory of driver information system; refer to vehicle Owner's Manual.

3.114 Toothed belt for camshaft drive: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ ; Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .

3.115 Toothed belt for camshaft drive, and drive sprockets for camshaft, crankshaft and high-pressure pump: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ ; Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .
- Renew drive sprockets for camshaft, crankshaft and high-pressure pump according to Workshop Manual ⇒ ; Rep. gr. 15 ; Toothed belt drive; Exploded view - toothed belt .

3.116 Tothed belt for camshaft drive and tensioning roller: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ ; Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .
- Renew tensioning roller according to Workshop Manual ⇒ ; Rep. gr. 15 ; Toothed belt drive; Exploded view - toothed belt .

3.117 Poly V-belt for ancillaries and pulley for power steering pump: renewing

Procedure:

- Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ ; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
- Renew pulley for power steering pump according to Workshop Manual ⇒ Running gear, axles, steering; Rep. gr. 48 ; Hydraulic power steering; Exploded view - power steering pump .



4 Exhaust emissions test



Note

- ◆ Please observe the statutory regulations applicable to your country.
- ◆ The exhaust emissions test described below conforms to the statutory regulations applicable in Germany.

Petrol engines: performing exhaust emissions test [⇒ page 138](#)

Diesel engines: performing exhaust emissions test [⇒ page 145](#)

4.1 Petrol engines: performing exhaust emissions test

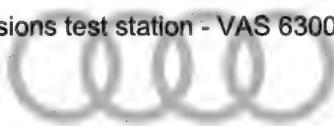


Note

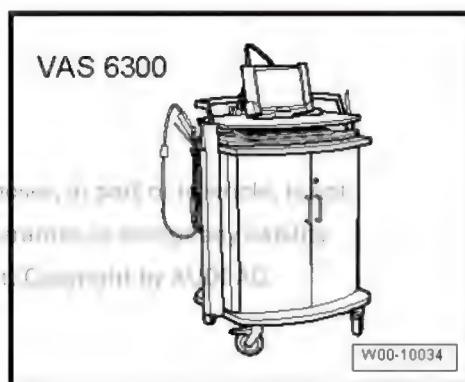
- ◆ The following description refers to vehicles equipped with on-board diagnosis (OBD) with a closed-loop catalytic converter.
- ◆ The OBD monitors all components and (sub)systems which affect the exhaust gas quality.

Special tools and workshop equipment required

- ◆ Emissions test station - VAS 6300-



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- ◆ Adapter wire, OBD communication - VAS 5052/16-1-



Note

- ◆ In order for the exhaust emissions test to be carried out, all components of the emissions test station - VAS 6300- must be properly plugged in and connected to one another as specified in the operating instructions.
- ◆ All the required steps are displayed on the emissions test station - VAS 6300- .

Test requirements

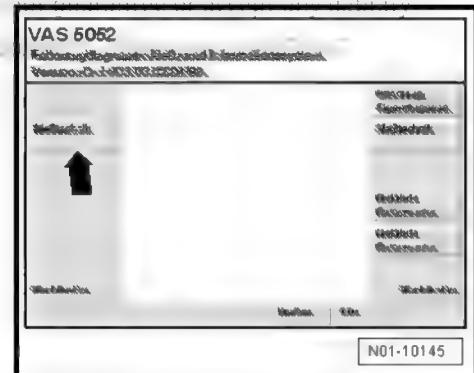
- All test requirements and data for the exhaust emissions test are stated on the exhaust emissions test data sheet for the required engine.
- If the specifications for the exhaust emissions test will be scanned in using a bar code, the data sheet must be available as a printout.

- Automatic gearbox: selector lever in position "P" or "N"
- Manual gearbox: gear lever in neutral
- Handbrake applied
- Follow instructions shown on display.

Start screen

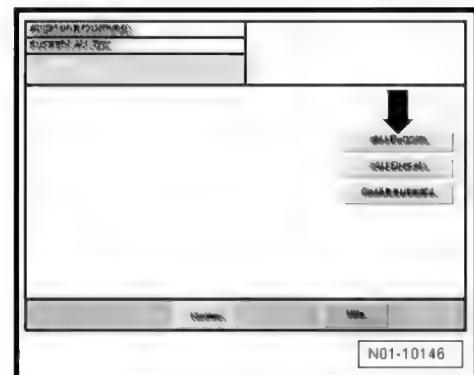
- Select "Emissions test" button -arrow-.

An overview of exhaust emissions test types will appear.

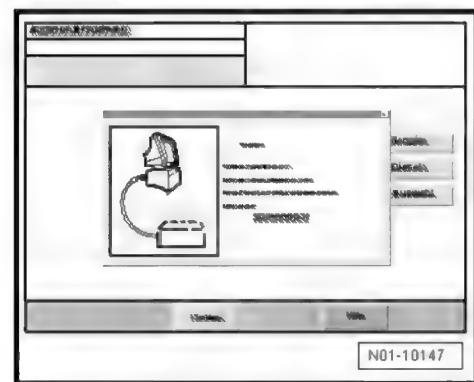


- Select "Emissions test, petrol" -arrow-.

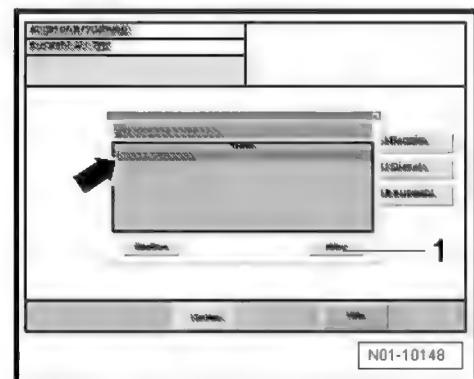
A display for the warm-up period will be shown.



- Continue exhaust emissions test according to the instructions on the display.



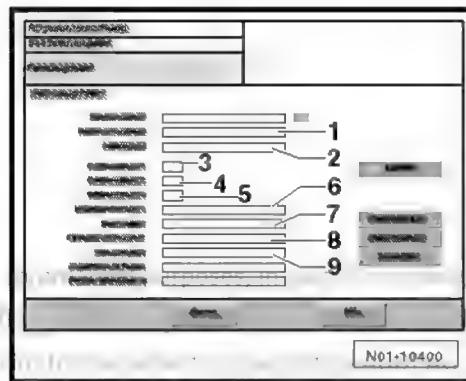
- When the options for the exhaust emissions test specifications are shown, select the option required -arrow-:
 - ◆ Either "Standard specifications" (for an initial exhaust emissions test)
 - ◆ Or "Last vehicle" (to repeat a previous exhaust emissions test)
- Confirm **Next** -item 1- on display.



Entering vehicle data

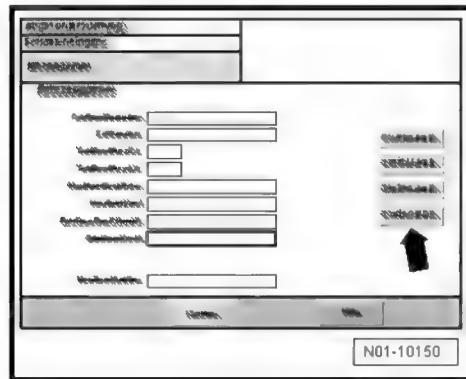
The input menu for vehicle data will be shown.

- Enter the following data from the registration document (part 1):
 - ◆ -1- Vehicle manufacturer, e.g. Audi
 - ◆ -2- Vehicle model, e.g. A6 / 4G
 - ◆ -3- Code for 14.1, e.g. 0572
 - ◆ -4- Code for 2.1, e.g. 0588
 - ◆ -5- Code for 2.2, e.g. 846
 - ◆ -6- Engine code: e.g. CHVA
 - ◆ -7- Number plate: e.g. IN-MV 1234
 - ◆ -8- Vehicle identification number, e.g. WAUZZZ4GZAN001234
- Enter mileage (km), e.g. 33350, at -item 9-.



Note

- ◆ Additional functions can be selected using the **Go to** button.
- ◆ The **Go to** button can be used to cancel the test.
- Select "With OBD" -arrow-.

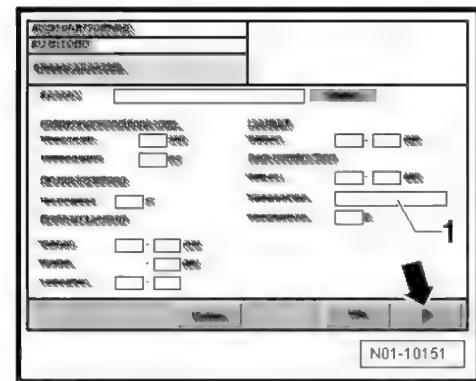


Entering exhaust emissions test specifications



Note

- ◆ The specifications must be entered manually if they are not available as a bar code.
- ◆ Refer to ⇒ Data sheets for exhaust emissions test (for required engine) for all test requirements and data for the exhaust emissions test.

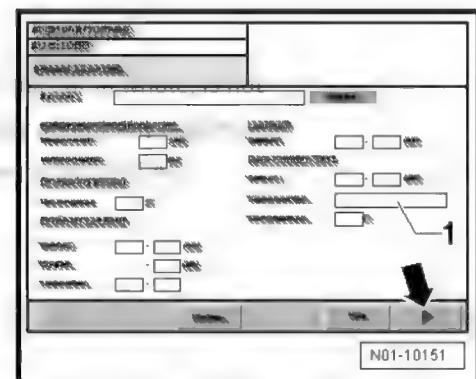


Entering exhaust emissions test specifications manually

- Follow instructions on display to enter data manually.
- Enter data listed on emissions test data sheet under "Test values for exhaust emissions test" on display in following order:
 - 1 - Test engine speed (idling speed)
 - 2 - Warm-up period of catalytic converter
 - 3 - Engine temperature
 - 4 - Increased idling speed
 - 5 - CO content at increased idling speed
 - 6 - Lambda at increased idling speed
 - 7 - Idling speed
 - 8 - Select control probe type: either »two-state probe« or »broad-band probe« -item 1-.
 - 9 - Lambda probe value
- Once you have entered all data correctly, confirm your entry with **Next** button -arrow-.

Entering exhaust emissions test specifications with a bar code

- If exhaust emissions test specifications are available as a bar code, use scanner pen to scan bar code on data sheet.
- All required data will be shown on display.
- Press **▶** button -arrow- to continue procedure.



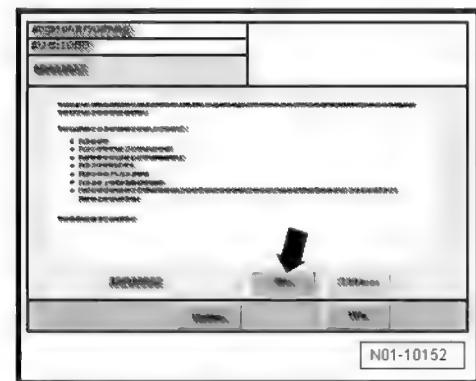
Visual inspection

- Follow instructions shown on display.
- Inspect all components relevant to exhaust emissions.
- Check that all components of exhaust system are fitted, complete and free of leaks and damage.
- If results of inspection are OK, press button for "OK" -arrow-.



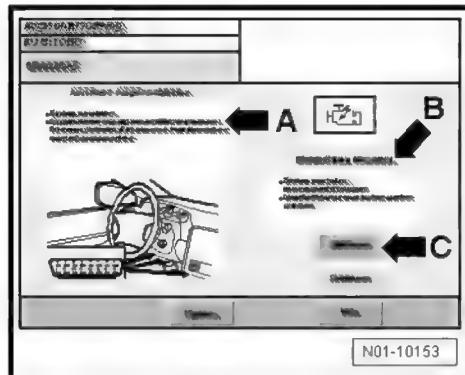
Note

Pressing the button for "Not OK" will start a test.

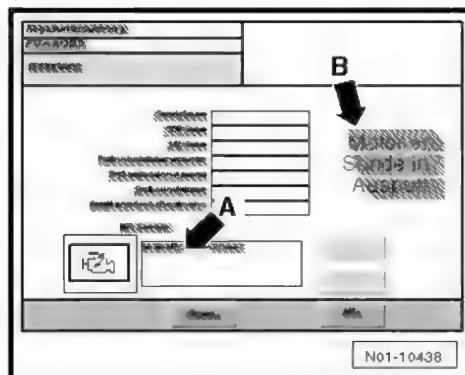


Plugging in diagnostic connector

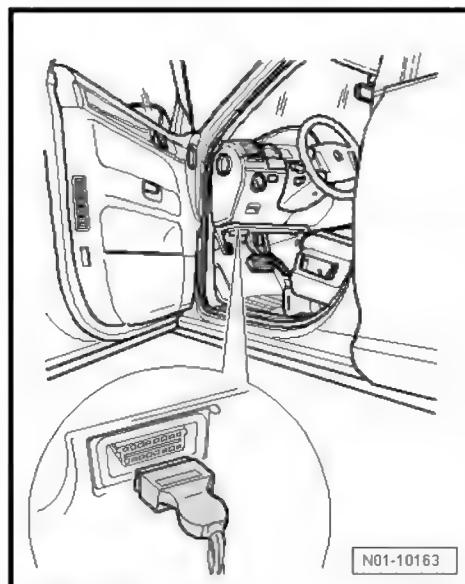
The screen for the visual inspection must be shown with prompts to plug in the diagnostic connector -arrow A- and to check exhaust emissions warning lamp -arrow B-.



- Follow instructions shown on display -arrow A- and -arrow B-.
- Switch off ignition.



- Plug connector of diagnosis cable into EOBD connection.



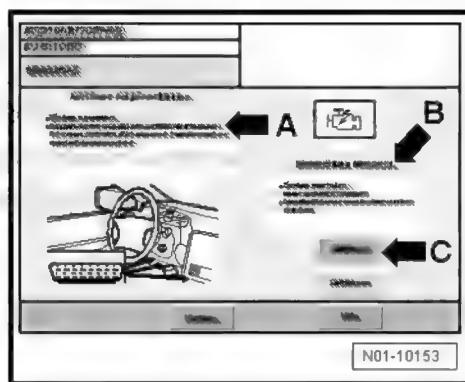
Visual check of exhaust emissions warning lamp with engine off

- Switch on ignition.
- Check exhaust emissions warning lamp.
- If lamp lights up, press button for "Lamp on" -arrow C-.



Note

The exhaust emissions test is failed if the exhaust emissions warning lamp does not light up during the visual check.

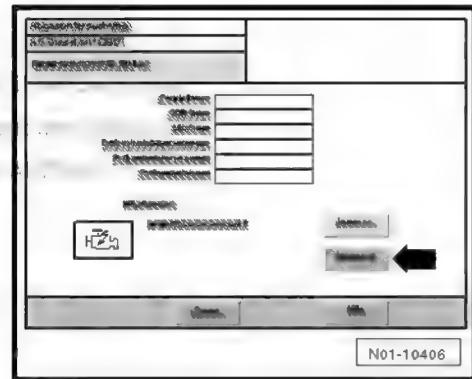


Visual check of exhaust emissions warning lamp with engine on

- Start engine and confirm that it is running by selecting "Yes" on display.
- Check exhaust emissions warning lamp; it must not light up or flash.
- Insert emission probe into exhaust pipe.

Note

Do not continue the exhaust emissions test until the test probe is in the exhaust pipe.



The system will automatically switch over to a test readiness check.

This checks that all test readiness checks supported by the control unit have been carried out.

- Confirm status of exhaust emissions warning lamp -arrow-.

Note

- ◆ *If all the display values are set to zero, a control probe test will not be performed.*
- ◆ *If not all the display values are set to zero, a control probe test will be performed in a later step.*

Catalytic converter temperature conditioning

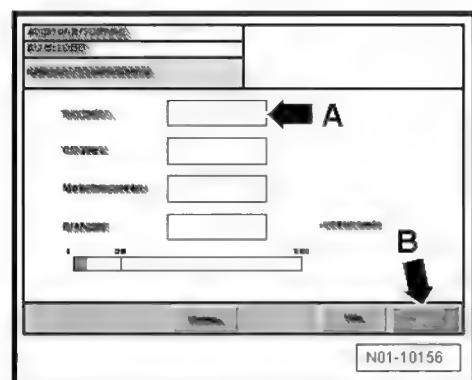
The system will automatically switch over to the warm-up phase of the catalytic converter.

- Follow instructions shown on display.

The measurement starts when the engine has reached the required speed.

- Keep engine speed within required range.

The remaining time for carrying out the warm-up phase will be shown -arrow A-.



Warm-up period

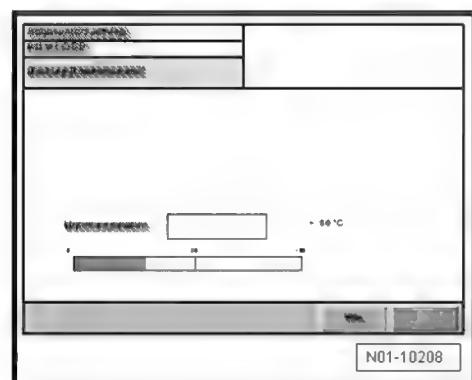
The system will automatically switch over to the screen for measuring the engine temperature.

- Follow instructions shown on display.

Note

This screen is only shown if the engine temperature has not yet reached 80 degrees Celsius.

- Bring engine up to required temperature.



Measurement at increased idling speed

The system will automatically switch over to the screen for measuring at increased idling speed.

- Follow instructions shown on display.

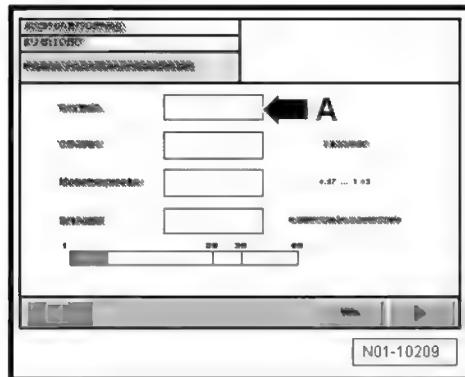
The measurement starts when the engine has reached the required speed.



Note

- ◆ You can skip the measurement by pressing the  button (the emissions test will be failed).
- ◆ You can reset the test values with the  button and repeat the test.
- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow A-.

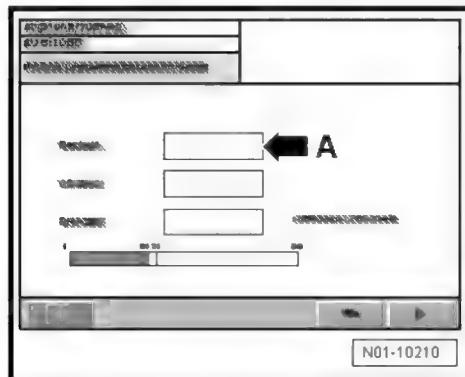


Measuring idling speed and CO content

The system will automatically switch over to the screen for idling speed and CO content.

The measurement starts when the engine has reached the required speed.

The remaining time for carrying out the measurement will be shown -arrow A-.



Control probe test



Note

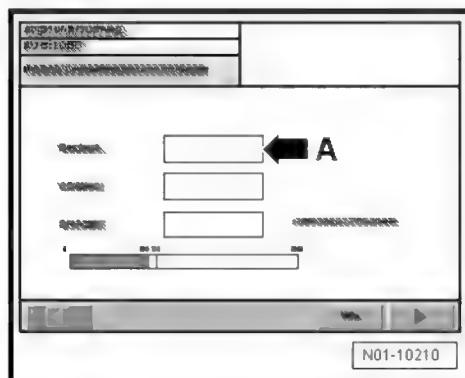
The control probe test cannot be carried out unless all values displayed from the test readiness check are NOT set to zero.

The system will automatically switch over to the screen for the control probe test.



Note

The control probe test is carried out individually for each Lambda probe.



The measurement starts when the engine has reached the required speed.

- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow A-.

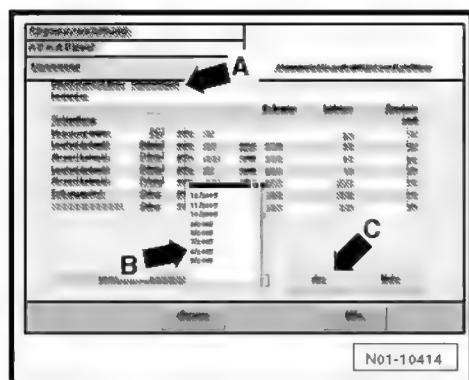
Evaluation

Once the exhaust emissions test is completed, the test log is displayed on the screen.

The result of the test will be shown.

You can enter remarks on the exhaust emissions test here -arrow A-. These will be added to the test log.

- If emissions test is passed, select date and "Emissions test seal granted" from drop-down menu -arrow B-.
- Confirm with "Yes" -arrow C-.

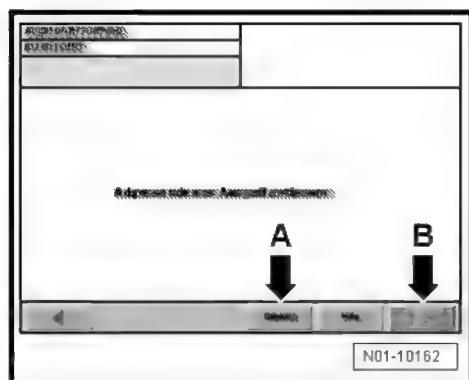


Printing

Following confirmation, two test certificates will be printed automatically.

- If additional certificates are required, press button for "Print" -arrow A-.
- Follow instructions shown on display.
- Remove emission probe from exhaust pipe.
- Then press □ button -arrow B-.

The exhaust emissions test is completed; a new test can now be performed.



4.2 Diesel engines: performing exhaust emissions test



Note

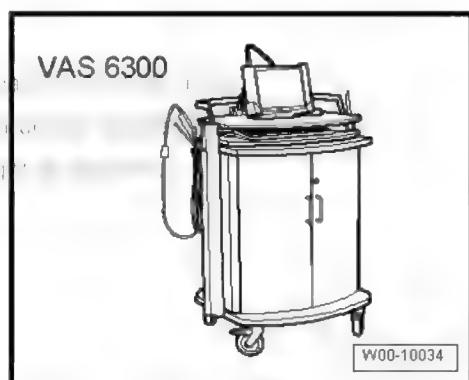
- ◆ *The following description refers to vehicles equipped with on-board diagnosis (OBD).*
- ◆ *The OBD monitors all components and (sub)systems which affect the exhaust gas quality.*

Special tools and workshop equipment required

- ◆ Emissions test station - VAS 6300-

Information on the following pages:

- ◆ *Setting up the VAS 6300 emissions test station*
- ◆ *Performing the exhaust emissions test*



- ◆ Adapter wire, OBD communication - VAS 5052/16-1-

 Note

- ♦ *In order for the exhaust emissions test to be carried out, all components of the emissions test station - VAS 6300- must be properly plugged in and connected to one another as specified in the operating instructions.*
- ♦ *All the required steps are displayed on the emissions test station - VAS 6300- .*

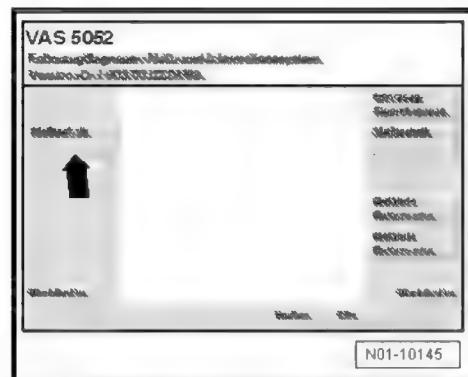
Test requirements

- All test requirements and data for the exhaust emissions test are stated on the exhaust emissions test data sheet for the required engine.
- If the specifications for the exhaust emissions test will be scanned in using a bar code, the data sheet must be available as a printout.
- Automatic gearbox: selector lever in position "P" or "N"
- Manual gearbox: gear lever in neutral
- Handbrake applied
- Follow instructions shown on display.

Start screen

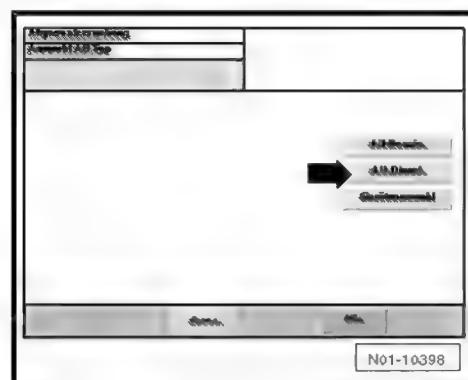
- Select "Emissions test" button -arrow-.

An overview of exhaust emissions test types will appear.



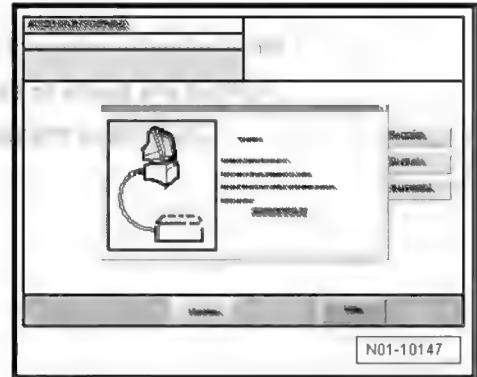
- Select "Emissions test, diesel" -arrow-.

A display for the warm-up period will be shown.

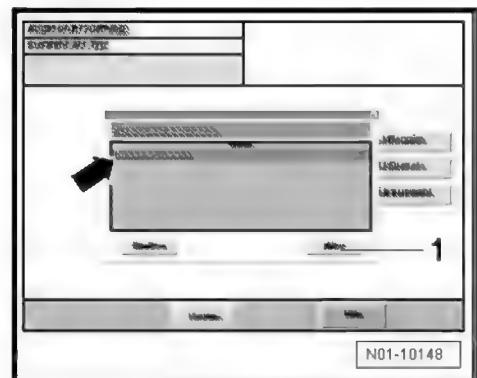




- Continue exhaust emissions test according to the instructions on the display.



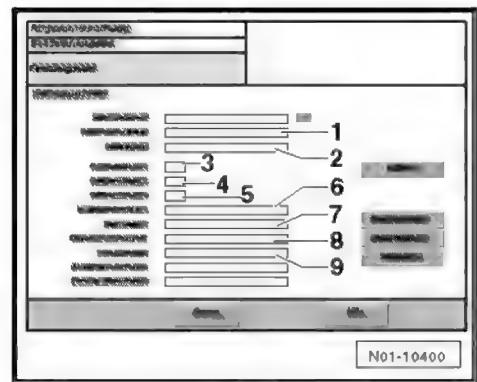
- When the options for the exhaust emissions test specifications are shown, select the option required -arrow-:
 - ◆ Either "Standard specifications" (for an initial exhaust emissions test)
 - ◆ Or "Last vehicle" (to repeat a previous exhaust emissions test)
- Confirm **Next** -item 1- on display.



Entering vehicle data

The input menu for vehicle data will be shown.

- Enter the following data from the registration document (part 1):
 - ◆ -1- Vehicle manufacturer, e.g. Audi
 - ◆ -2- Vehicle model, e.g. A6 / 4G
 - ◆ -3- Code for 14.1, e.g. 0572
 - ◆ -4- Code for 2.1, e.g. 0588
 - ◆ -5- Code for 2.2, e.g. 846
 - ◆ -6- Engine code: e.g. CHVA
 - ◆ -7- Number plate: e.g. IN-MV 1234
 - ◆ -8- Vehicle identification number, e.g. WAUZZZ4GZAN001234
- Enter mileage (km), e.g. 33350, at -item 9-.



Note

- ◆ Additional functions can be selected using the **Go to** button.
- ◆ The **Go to** button can be used to cancel the test.

- Select "Diesel OBD" -arrow-.

Entering exhaust emissions test specifications

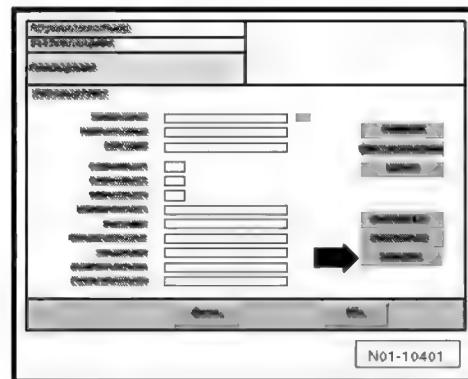
There are various ways of entering the specifications:

- ◆ 1. Manually
- ◆ 2. By scanning the bar code from the emissions test data sheet
- ◆ 3. Via the ELSA web service



Note

- ◆ *To use the ELSA web service, the vehicle diagnostic tester being used to perform the exhaust emissions test must be integrated in the workshop network.*
- ◆ *When using the ELSA web service, the vehicle specifications are entered on the corresponding screen automatically via the network.*



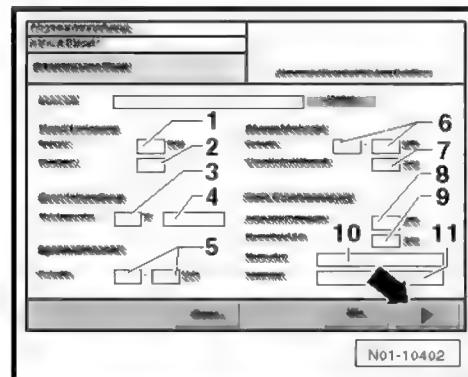
Entering exhaust emissions test specifications manually



Note

Refer to ➔ *Data sheets for exhaust emissions test (for required engine) for all test requirements and data for the exhaust emissions test.*

- Follow instructions on display to enter data manually.
- Enter data listed on emissions test data sheet under "Test values for exhaust emissions test" on display in following order:
 - 1 - Engine speed for temperature conditioning
 - 2 - Number of times engine revved up for temperature conditioning
 - 3 - Engine oil temperature (minimum value)
 - 4 - Select method for measuring engine oil temperature
 - 5 - Idling speed
 - 6 - Governed speed
 - 7 - Governed speed measuring time (to nearest second)
 - 8 - Turbidity value (arithmetic mean)
 - 9 - Select probe type (probe number)
 - 10 - Select measurement mode
 - 11 - Time required for measurement
- Once you have entered all data correctly, confirm your entry with button -arrow-.

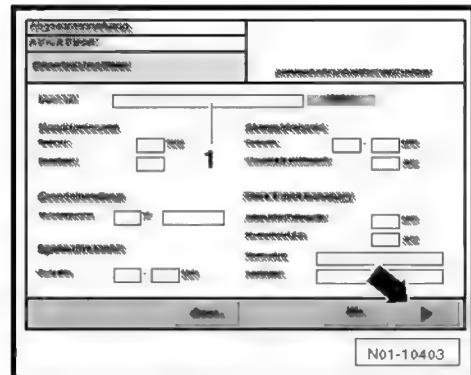


Entering exhaust emissions test specifications with a bar code

- If exhaust emissions test specifications are available as a bar code, use scanner pen to scan bar code on data sheet.

All required data will be shown on display -1-.

- Press button -arrow- to continue procedure.



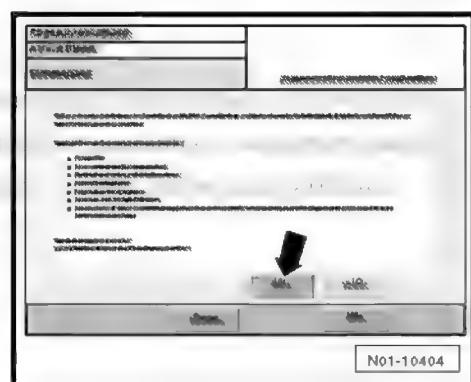
Visual inspection

- Follow instructions shown on display.
- Inspect all components relevant to exhaust emissions.
- Check that all components of exhaust system are fitted, complete and free of leaks and damage.
- If results of inspection are OK, press button for "OK" -arrow-.



Note

Pressing the button for "Not OK" will start a test.

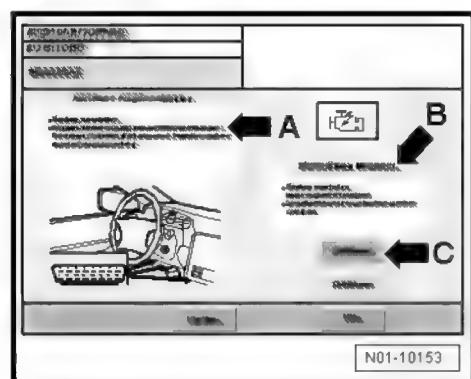


Plugging in diagnostic connector

- Ignition is switched off.

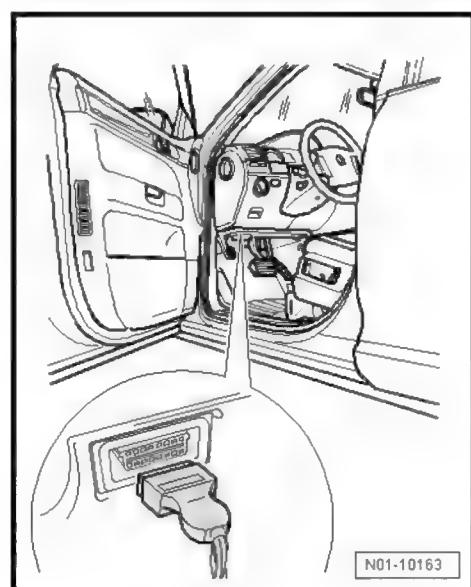
The screen for the visual inspection must be shown with prompts to plug in the diagnostic connector -arrow A- and to check exhaust emissions warning lamp -arrow B-.

- Follow instructions shown on display.
- Plug connector of diagnosis cable into EOBD connection.



Visual check of exhaust emissions warning lamp with engine off

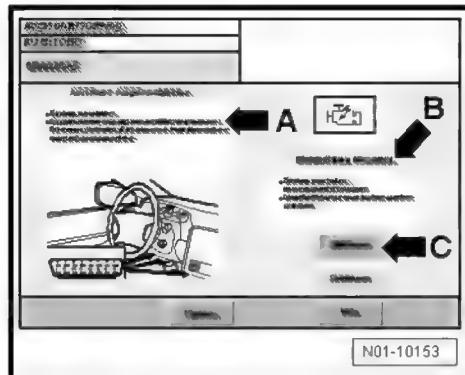
- Switch on ignition.
- Check exhaust emissions warning lamp.



- If lamp lights up, press button for "Lamp on" -arrow C-.



The exhaust emissions test is failed if the exhaust emissions warning lamp does not light up during the visual check.

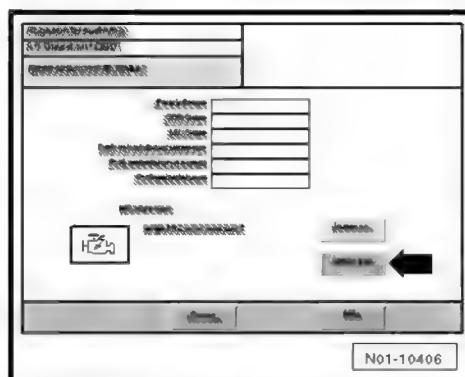


Visual check of exhaust emissions warning lamp with engine on

- Start engine and confirm that it is running by selecting "Yes" on display.
- Check exhaust emissions warning lamp; it must not light up or flash.
- Confirm status of exhaust emissions warning lamp -arrow-.

The system will automatically switch over to a test readiness check.

This checks that all test readiness checks supported by the control unit have been carried out.

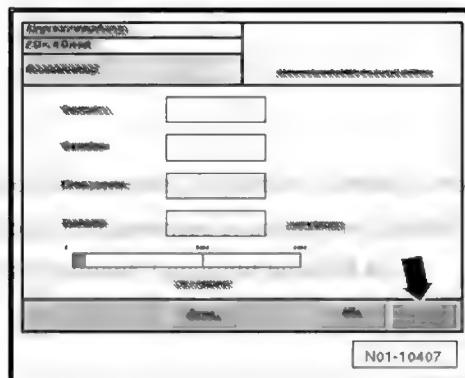


Temperature conditioning

In the temperature conditioning phase, the engine and any emission control systems are brought up to operating temperature by revving up the engine several times; this makes them ready for the exhaust emissions test.

- Follow instructions shown on display.
- Keep engine speed within required range.

If you are certain that no temperature conditioning is necessary, press button -arrow- to proceed to next measurement.



Reading out the engine temperature

The engine temperature is read out from the engine control unit via the diagnostic connector.

After the required engine temperature has been reached, the system will automatically switch over to the screen for measuring the idling speed.

Measuring the idling speed

- Follow instructions shown on display.

The measurement starts when the engine has reached the required speed.



Note

- ◆ *Do not insert emission probe into exhaust pipe yet.*
- ◆ *You can skip the measurement by pressing the button (the emissions test will be failed).*
- ◆ *The button can be used to repeat the test.*

- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow-.

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Measuring the governed speed

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The system will automatically switch over to the screen for measuring the governed speed.

The measurement starts when the engine has reached the required speed.

- Press the accelerator pedal down without delay and hold until measurement has been completed.



Note

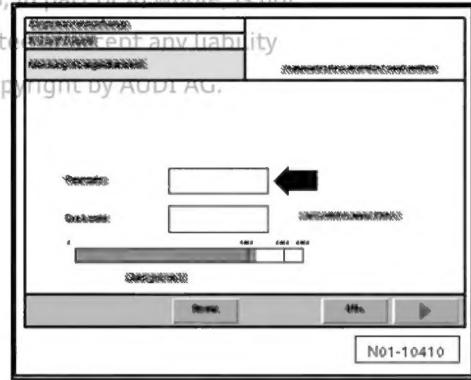
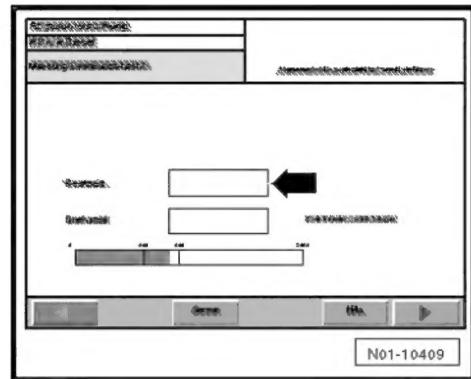
- ◆ *If the rev limiter is activated, deactivate it before performing the exhaust emissions test:*
- ◆ *Switch on the ignition and then press and hold the **ESP** button until the corresponding symbol flashes in the instrument cluster.*

The remaining time for carrying out the measurement will be shown -arrow-.



Note

- ◆ *Do not insert emission probe into exhaust pipe yet.*
- ◆ *You can skip the measurement by pressing the button (the emissions test will be failed).*



Air quality check

An air quality check is started before the free acceleration procedure is performed. The emission probe must NOT be in the exhaust pipe at this stage. Otherwise, measurement errors or error messages may occur during the subsequent measurement procedures.

- After air quality check is completed, insert emission probe in exhaust pipe.

Free acceleration

The system will automatically switch over to the screen for the free acceleration procedure.

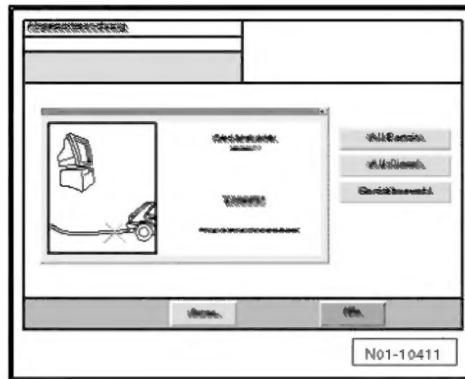
In the free acceleration procedure, the engine is accelerated as quickly as possible (without load) until the governed speed is reached.

The free acceleration test consists of at least four individual accelerations.

Free acceleration - phase 1

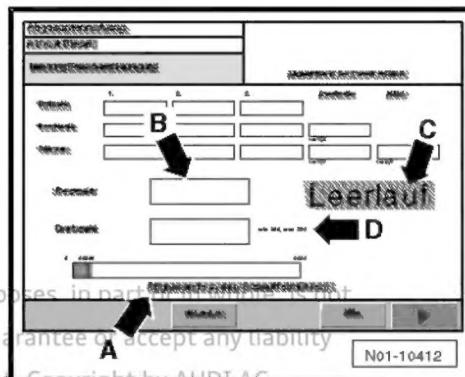
- Follow instructions shown on display -arrow A- and -arrow C-.
- Keep idling speed in specified speed range -arrow D-.

The remaining time for carrying out the measurement will be shown -arrow B-.



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- ◆ *The emission probe must be in the exhaust pipe.*
- ◆ *If the engine speed is not within the specified speed range, the measurement procedure is re-started.*
- ◆ *You can skip the measurement by pressing the [] button (the emissions test will be failed).*



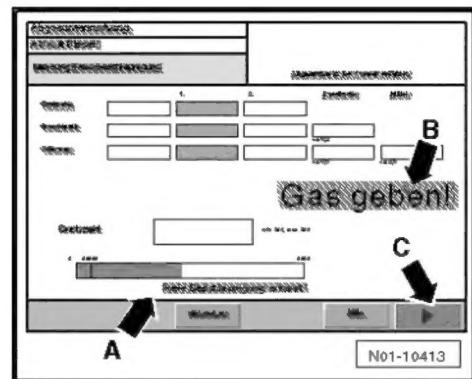
Free acceleration - phase 2

- Follow instructions shown on display -arrow B-.
- Press accelerator pedal down fully when prompted to do so and hold it until display prompts you to let engine idle.

Free acceleration - phase 3

- Take your foot off accelerator pedal as soon as display shows prompt for engine idling speed -arrow B-, and let engine idle.

The result of the measurement procedure and information about the most recently performed free acceleration procedure will appear on the display -arrow A-. If the measured values are not OK, you will be informed at this stage about the reasons why the free acceleration test was failed.



Note

- If the field is white, the measured value is within the tolerated range.
- If the field is red, the measured value is outside the tolerated range.
- If the field is yellow, the measured value is outside the tolerated range but is subject to the judgement of the person performing the test.

Further individual accelerations

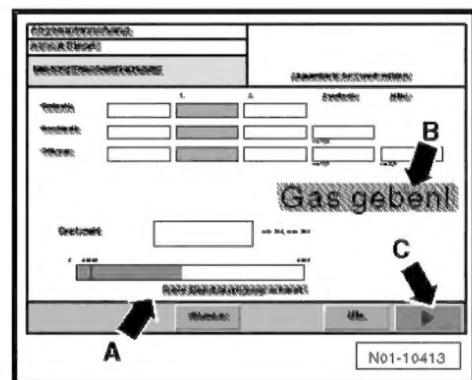
The next individual acceleration is now performed, beginning with phase 1 of the free acceleration procedure.

It is possible to perform as many free acceleration procedures as desired until:

- Three free acceleration procedures in a row have been passed, and the acceleration range is OK.
- All values are OK with the exception of the acceleration range, and the button -arrow C- has been pressed to continue the test procedure (in this case, the person performing the test judges whether or not the value is OK).
- The values are not OK, and the → button -arrow C- has been pressed to end/skip the measurement.

If all measured values are OK after the engine has been revved up three times (i.e. all fields are white), the exhaust emissions test has been passed.

If all measured values are OK after the engine has been revved up three times, the exhaust emissions test has been passed.



Evaluation

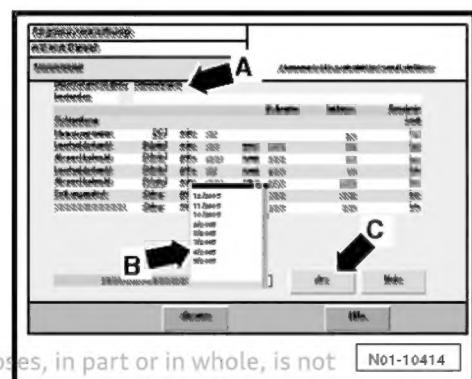
Once the exhaust emissions test is completed, the test log is displayed on the screen.

The result of the test will be shown.

You can enter remarks on the exhaust emissions test here -arrow A-. These will be added to the test log.

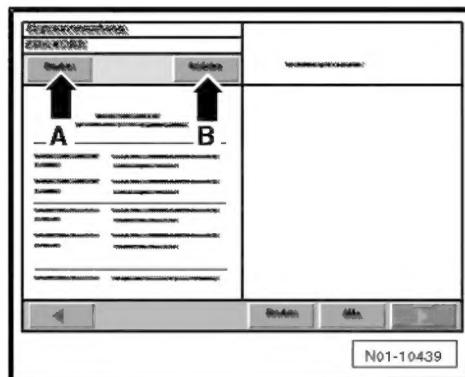
- If emissions test has been passed, select date and "Emissions test seal granted" from drop-down menu -arrow B-.
- Confirm with "Yes" -arrow C-.

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The emissions test log appears on the screen and can be printed out as often as desired using the "Print" button -arrow A- in the "Print preview" menu.

- You can close the "Print preview" menu by using the "Close" button -arrow B-.
- Follow instructions shown on display.
- Remove emission probe from exhaust pipe.



- Then press button -arrow B-.

The exhaust emissions test is completed; a new test can now be performed.



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